AMERICAN FABRICS

Fall 1952

Number Twenty-three

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. . . dedicated to the belief that Fashion begins with the Fabric . . . that the American textile industry casts a major influence on the economic and social aspects of the world in which we live and that it has deservedly attained the world's pinnacle from which it can never be dislodged. This volume number twenty-three of American Fabrics, focussing its editorial spotlight on Lace and the Incredible Leavers Machine, on the Story of Linen and on the History and Manufacture of Enka Rayon . . . is offered as a measure of help, of service . . . and, we hope, of inspiration.

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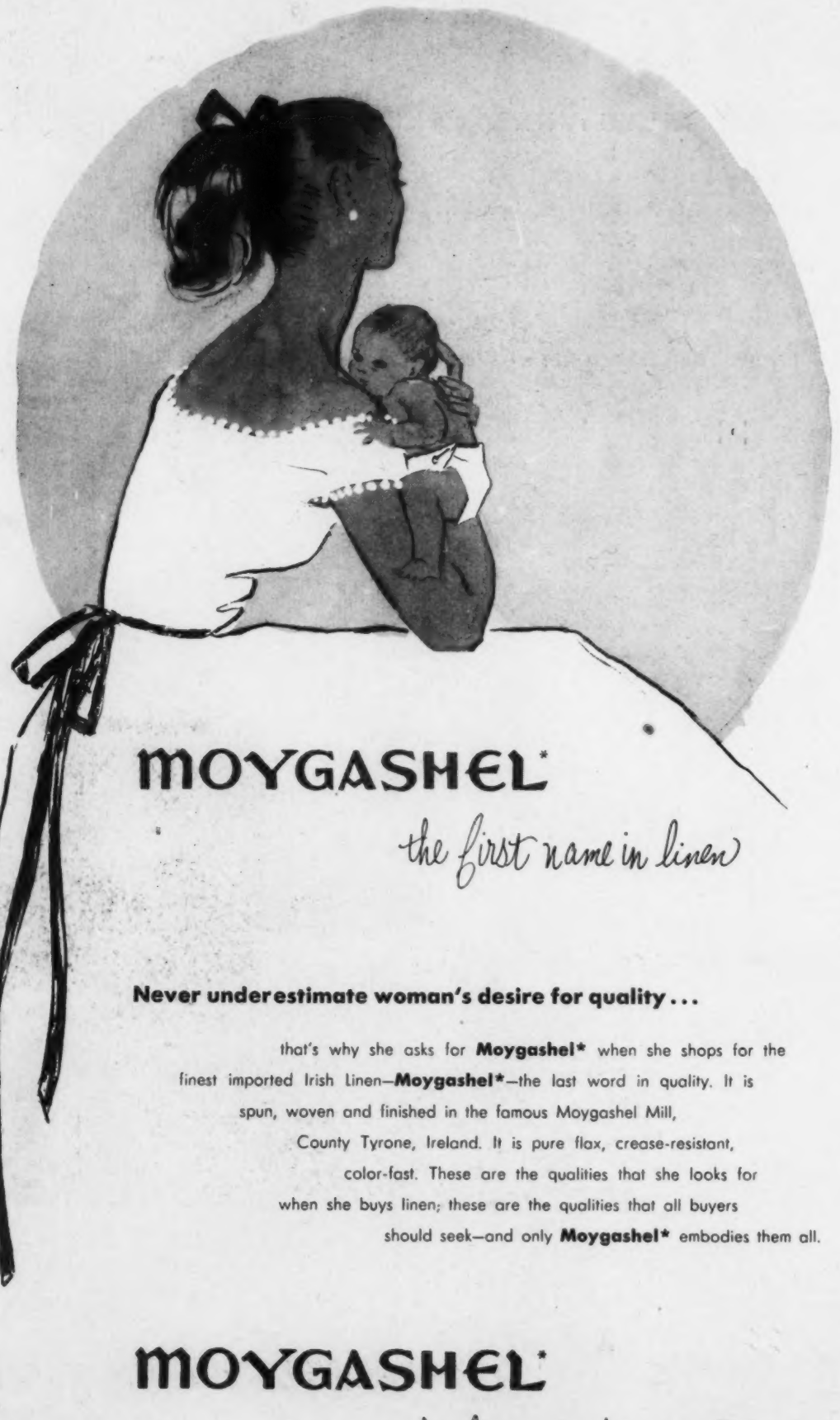

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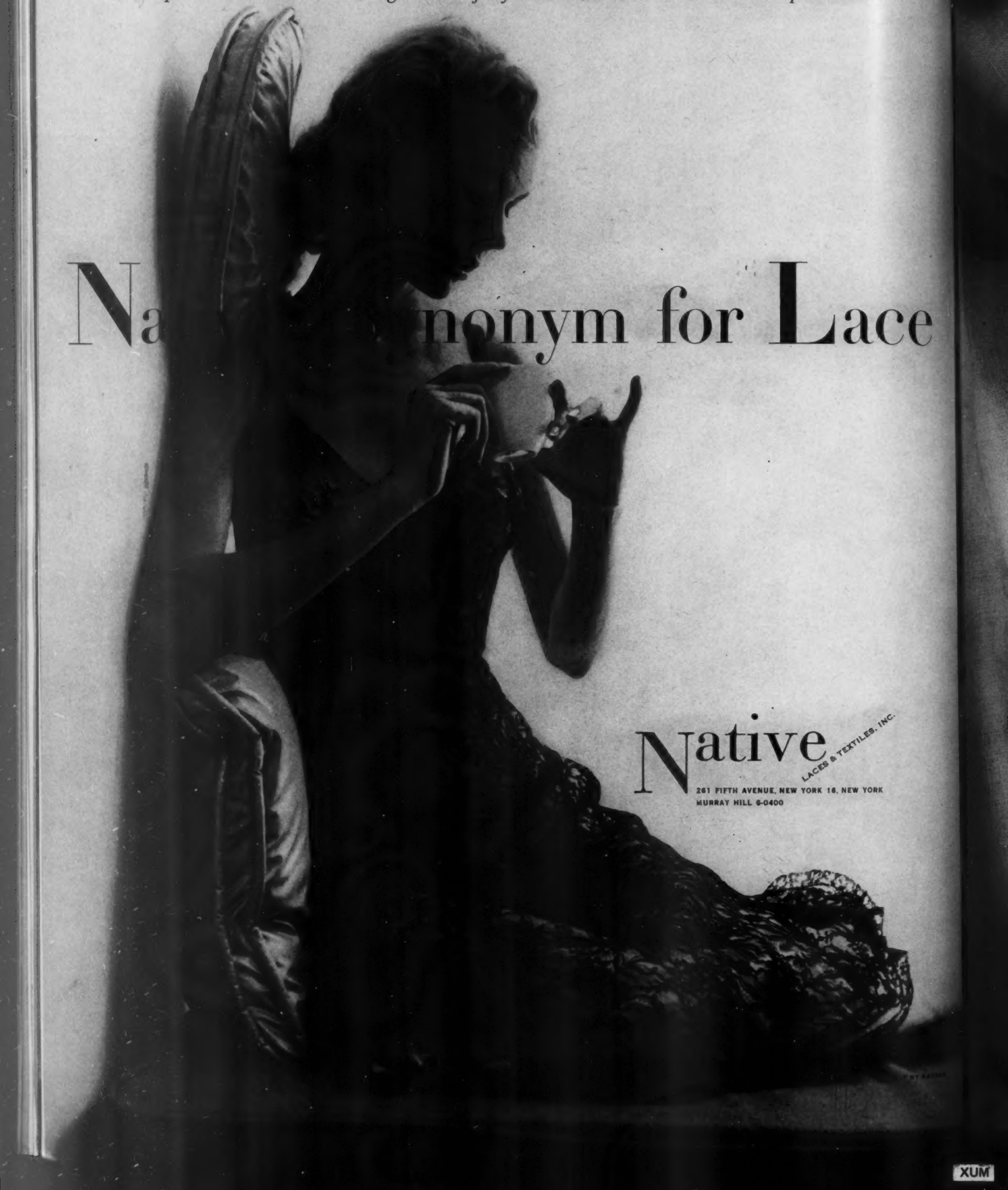

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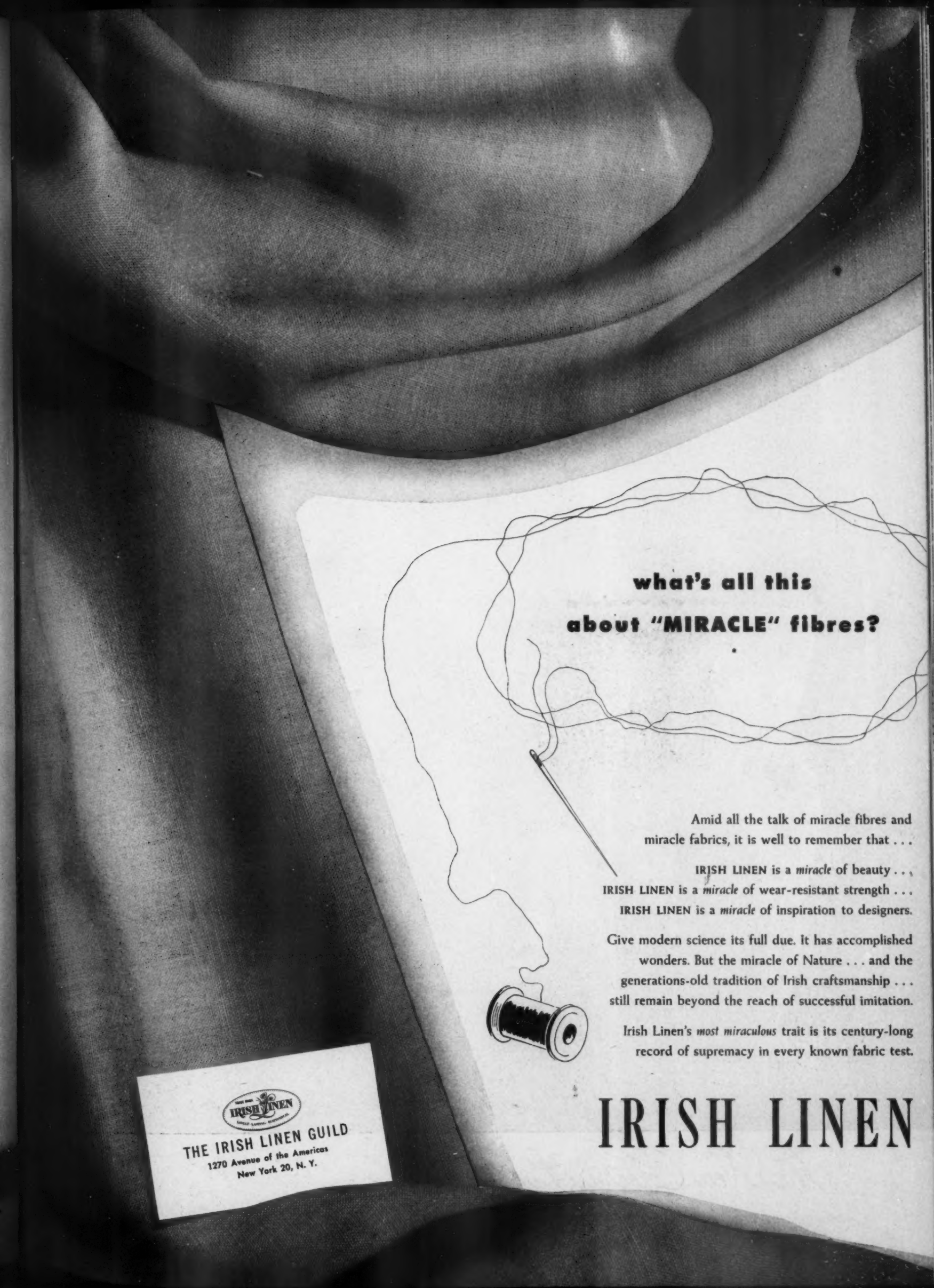

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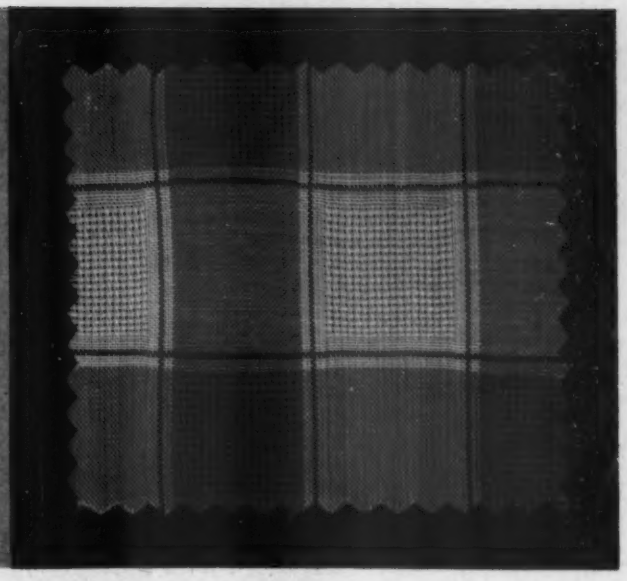

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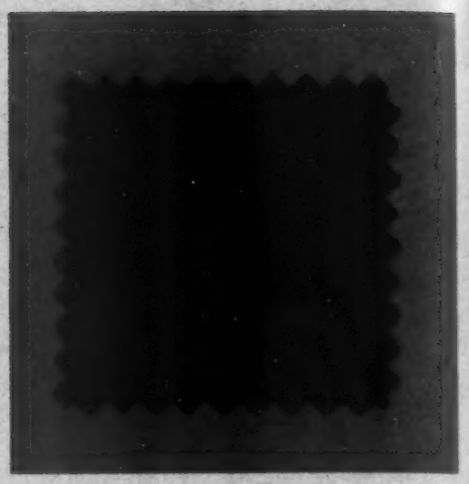

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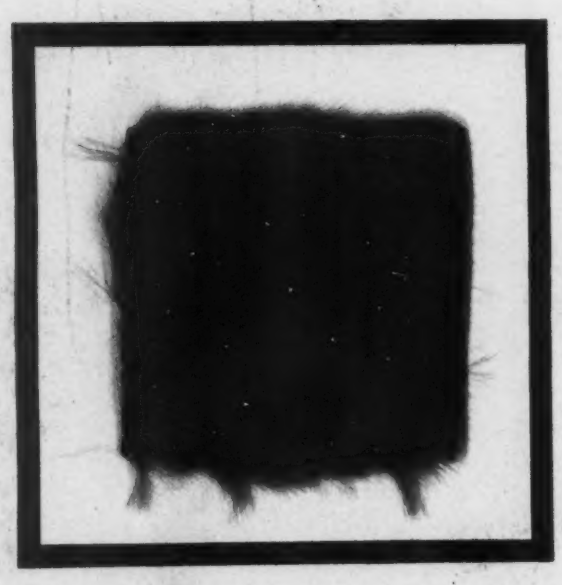

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3 ANDORA—*Mother-of-the-Bride dinner length gown of imported Marie France Lace by Ametex, contrasting flower. Hat by John Frederics, Inc.*

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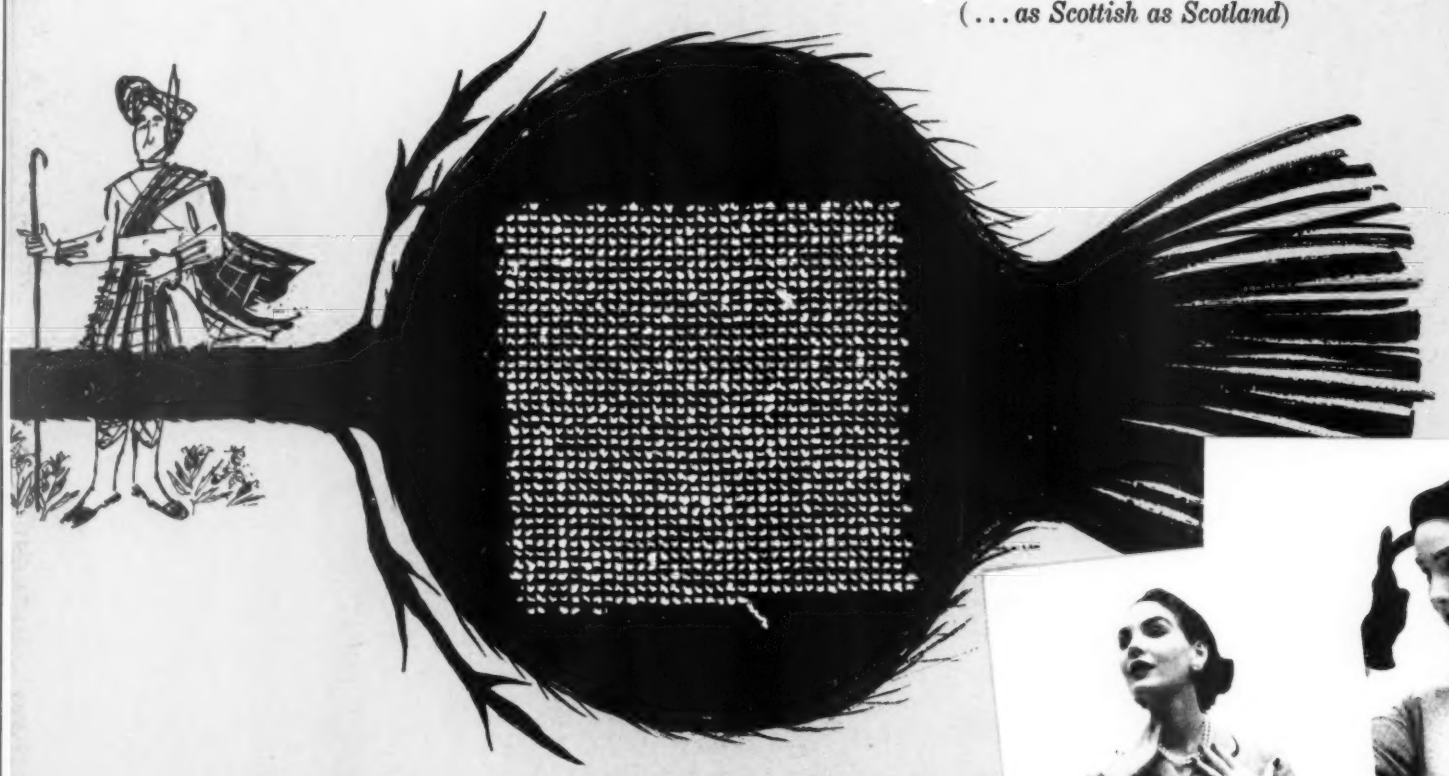

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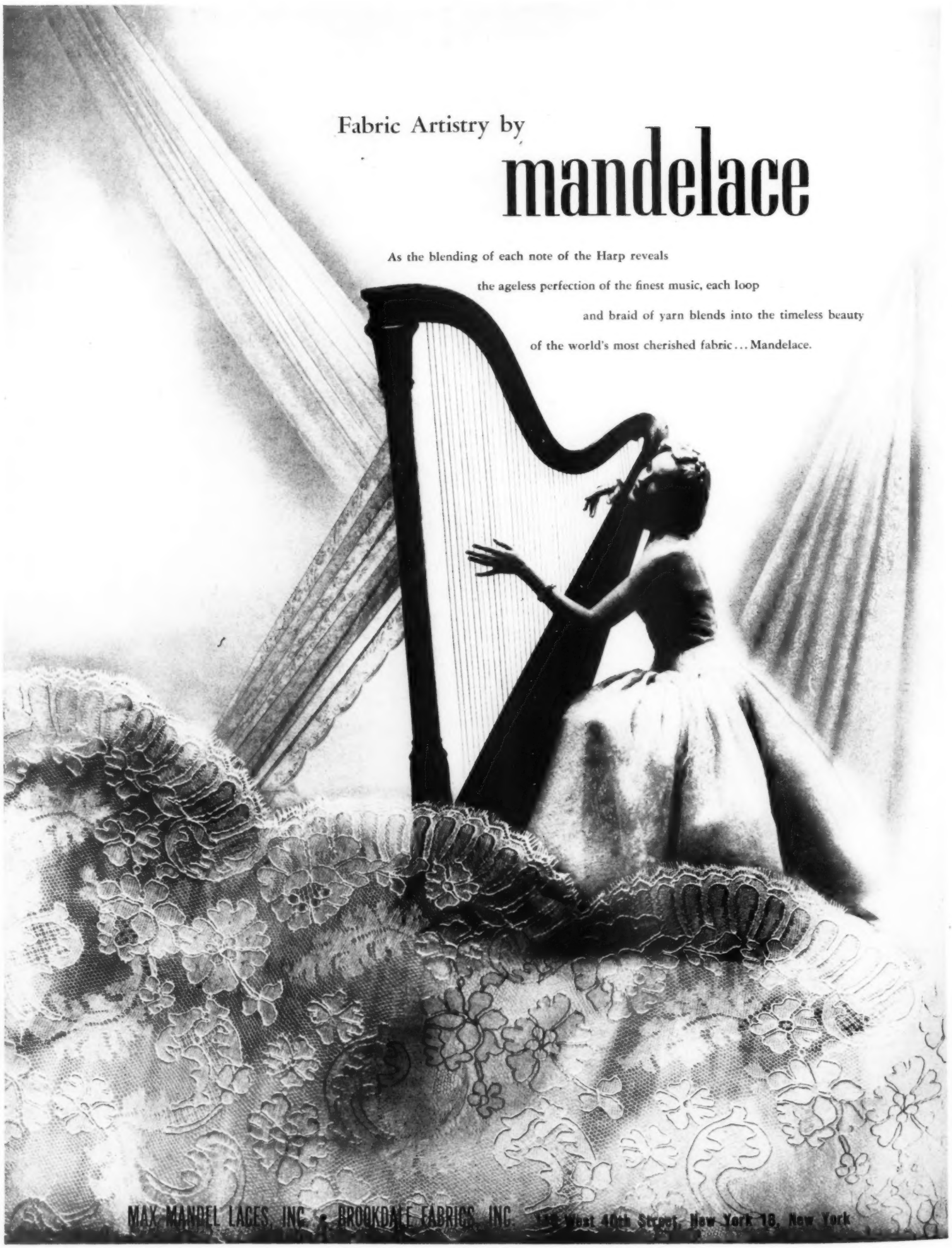

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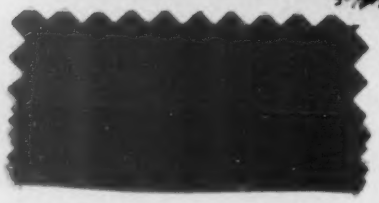

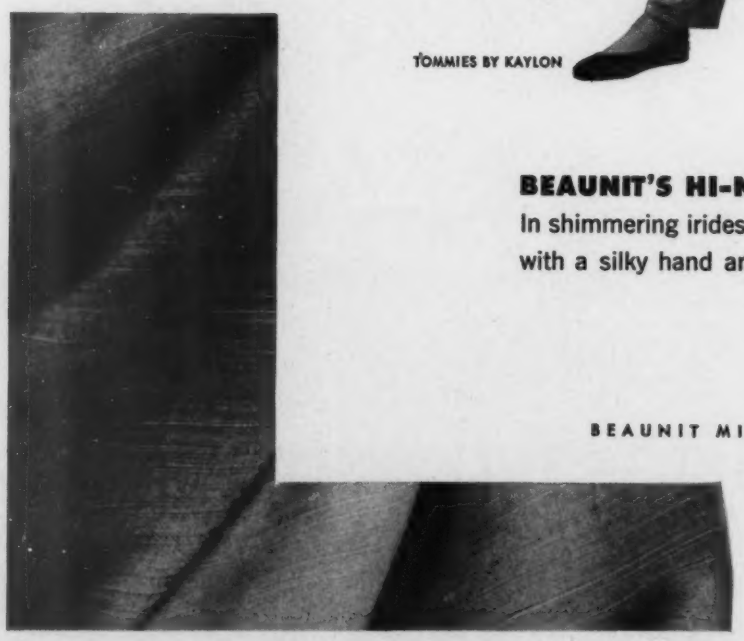

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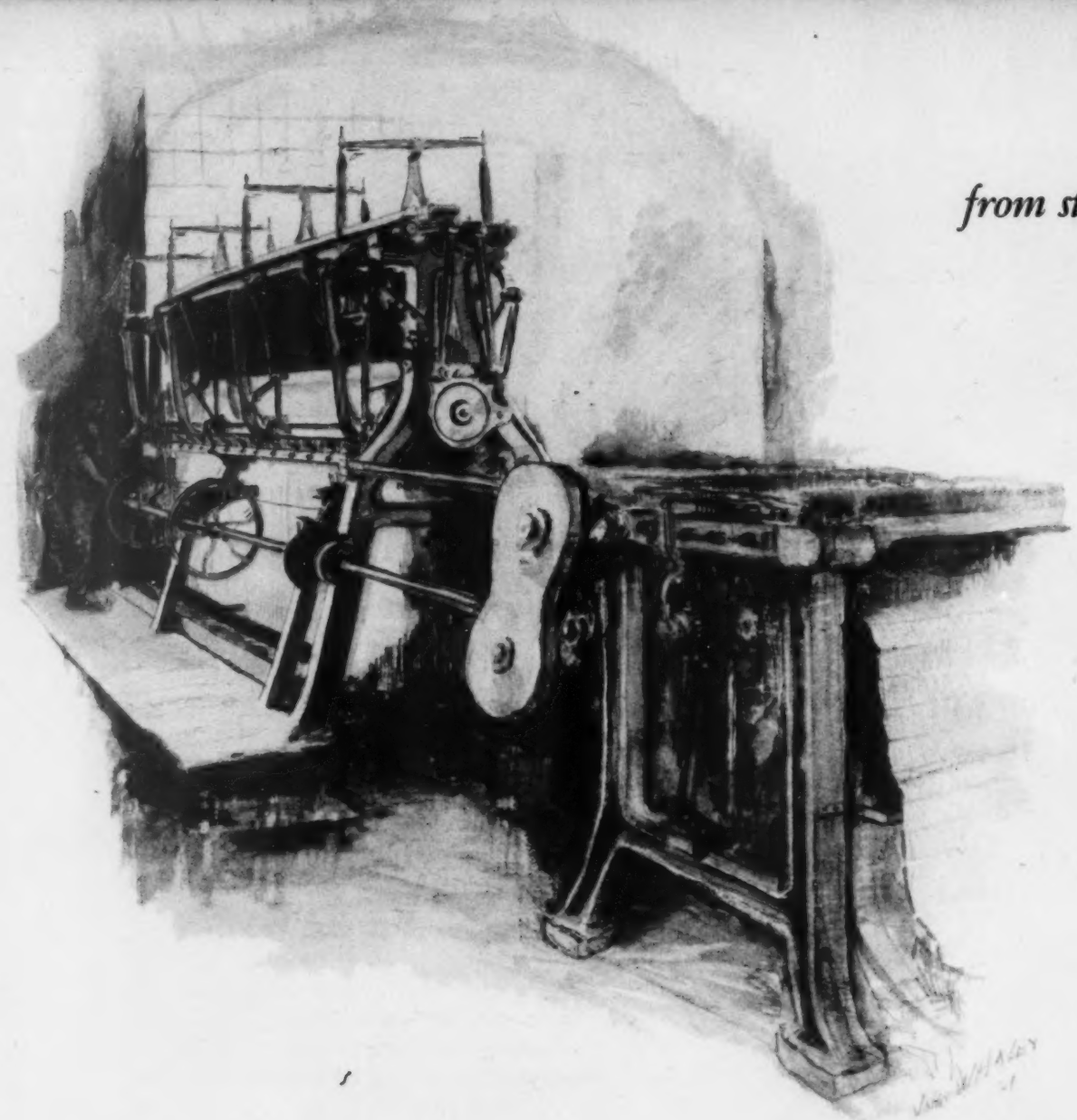

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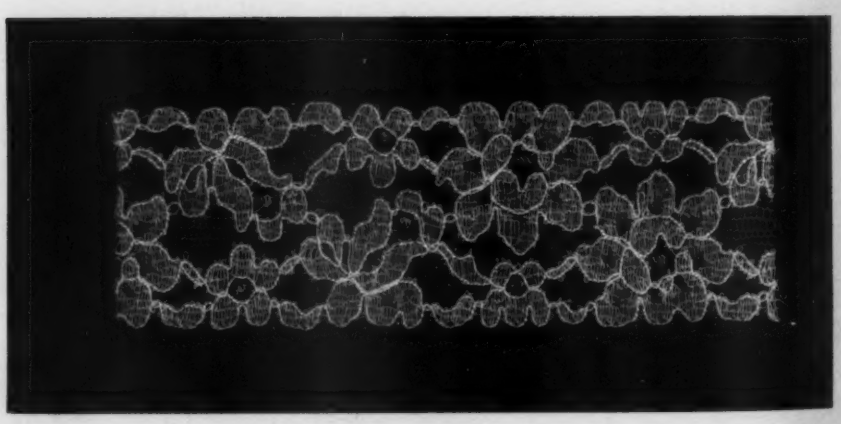

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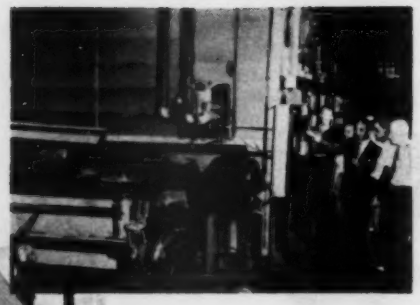

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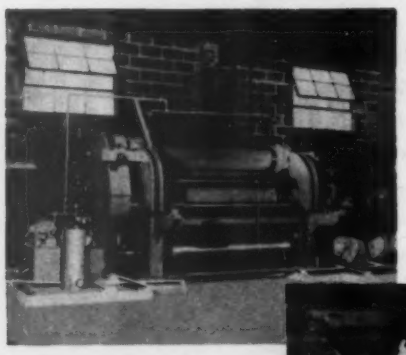

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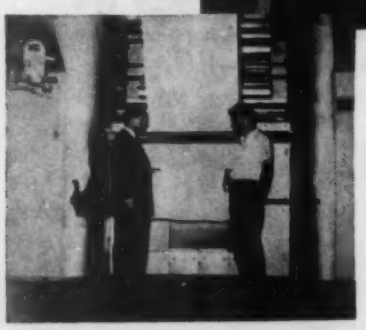

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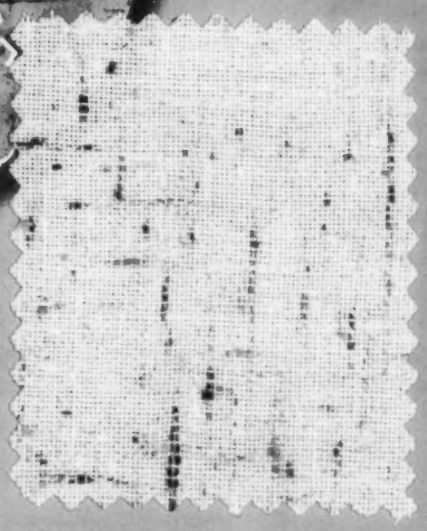
Lankenau's

MULTITONE

for the world of fashion



It's getting a big hand
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winning applause for its sparkling personality.

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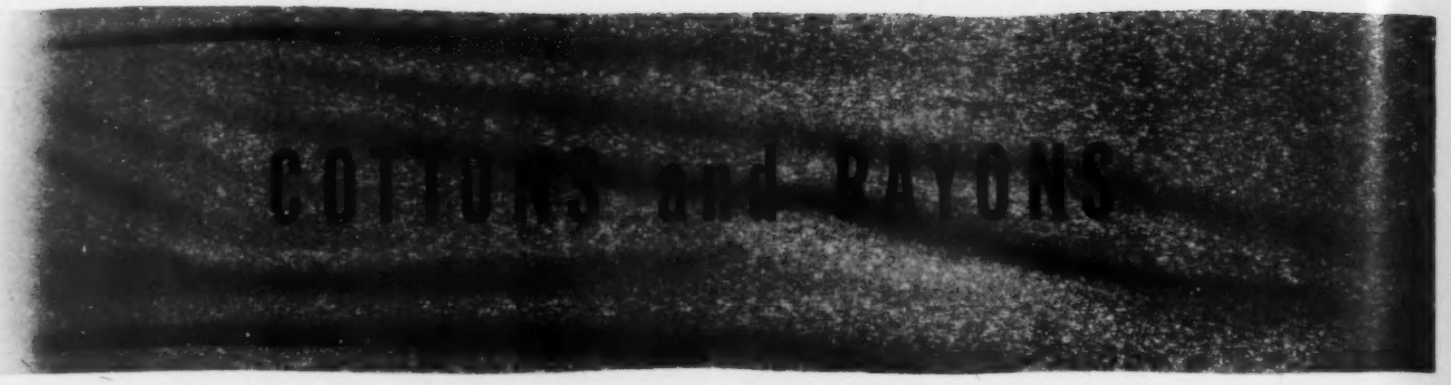
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Quality Controlled Fabrics

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"Fashion Right"

A respected force in the textile community

Because the Glen Raven operation is so all-inclusive, we enjoy a unique opportunity for reciprocal experience, planning and resources. This is reflected in the traditional Glen Raven quality—assured by personalized quality-control from yarn to you —and in fabulous Glen Raven values— a vitally important factor in today's economy.

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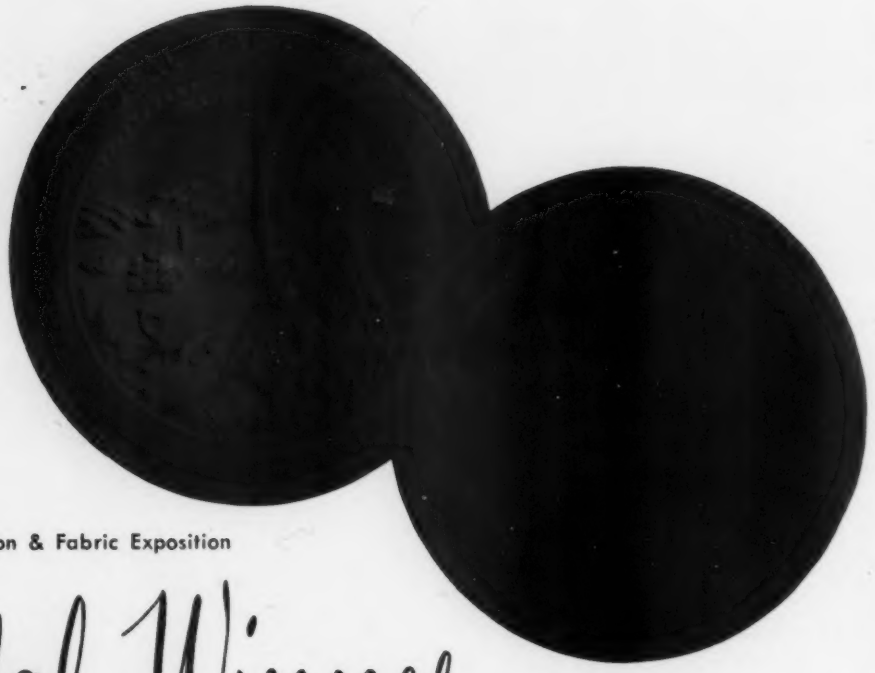

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Gold Medal Winner

An exciting new family of Everglaze* fabrics

Sculptured Effects

"Everglaze" Sculptured Effects by
EVERFAST FABRICS, INC.

*A trade mark signifying fabric processed and tested according to processes and standards controlled and prescribed by Joseph Bancroft & Sons Co.

The official award reads:

Joseph Bancroft and Sons Company—"Everglaze"
for
Outstanding Development of Sculptured Fabrics

Entered in the Textile Innovation classification, these new "Everglaze" fabrics were given the award, not for any one design, but rather for their beautiful sculptured effects.

"Everglaze" fabrics are the result of a program of continuing textile research. The new sculptured effects, like all other "Everglaze" fabrics, possess this remarkable combination of desirable properties:

- ✔ washable or dry cleanable
- ✔ dry quickly • iron easily
- ✔ durable
- ✔ shrink and stretch resistant
- ✔ spot and soil resistant
- ✔ mildew resistant
- ✔ lasting crispness and beauty
- ✔ luxury at low cost
- ✔ intricate surface textures and effects are all completely durable the full life of the fabric.

LORRAINE® WORSTEDS

This famous brand name is an acknowledged leader in the women's wear industry. LORRAINE innovations in weaving, patterns and colors are invariably accepted as style leaders.

The LORRAINE Label signifies to manufacturers, their customers and their customers' customers that these 100% virgin worsteds are of superior quality and incomparable value.

LORRAINE MANUFACTURING COMPANY, INC.
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A Subscription to:

AMERICAN FABRICS

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American Fabrics will send at the proper time a handsome Greeting Card notifying the recipient of your gift...

Write to attention: Gift Department,

AMERICAN FABRICS, 350 FIFTH AVENUE, N.Y.C.

GENTRY asks . . .

Is a man just 1/2,000,000,000th of the earth's population?

We believe people want and will respond to positive ideas brought to them in language they can understand... ideas brought to them in such a way that they can apply them to their own immediate situation. In magazines these days there is much beguiling and soporific escape material, or "interesting" factual information of a miscellaneous sort. This may, in a sense, be justified as a way to fill up the reader's time, to keep him from thinking about uncomfortable things. This may be enough, temporarily, to satisfy a large segment of society which feels this way in common; but it cannot work for very long. More and more people are now busy questioning what *are* the real values in their lives.

A Man is not Just 1/2,000,000,000th of the Earth's Population

And as the number of such inquiring people grows, there is needed a magazine whose main function is the collecting of as much wisdom as possible on the real values of the individual; *to show that, after all, a man is not just 1/2,000,000,000th of the earth's human population.*

As well as restoring faith in and raising morale about the real values of the individual taken by himself, people need also to know the common ground which links them with all other individuals. To these two poles—the individual, and how he fits into the rest of humanity—just about everything which actually affects a person can be related in some significant way.

WHY be informed about a lot of theories on art, unless one understands what a study of art can really do for one's self?

WHY have a lot of scientific facts, unless one can apply them externally or internally toward modifying the conditions of outside life, or understanding the conditions of one's interior life?

WHY have hobbies like bird-watching or plant collecting unless one comes to the realization that each component of a larger organism behaves always in the same way and that one can recognize the whole from any part, once he has observed and realized the whole?

WHY have any knowledge unless the reader can come upon it in some form which makes sense to his level of understanding, and shows him at what point he can apply it to his own situation?

In other words, you can have an article on anything in the universe, but unless a person really feels that you are talking about *his* universe, and that the subject of the article matters to *him* . . . here and now . . . it remains external and pointless.

All this now brings us to the main point: Gentry is becoming known to a growing number of readers as the place where one can find fascinating, useful, universal and *living* articles. In an era when great newspapers and most mass circulation magazines are trying to mold the reader's mind and mores to what *they* think is the perfect norm, Gentry is growing gradually into a Mecca for people who really want to *think* and *feel* and enjoy living in the fullest possible way.

Every man Is Actually Three Men

If you ask *why* . . . consider the following:

(1) Some magazines give you facts, but Gentry gives facts which matter to you.

(2) Some magazines try to keep you what you are. Gentry tries to show you what you could be.

(3) Some magazines would like you to accept their point of view. Gentry tries to help you think for yourself.

(4) There is always something in all true scientific discovery, no matter how remote it may seem, of immediate concern to every human. When Gentry has a scientific article it always strives to make this relationship clear.

(5) Is there a common denominator to Art? Artistic symbols differ in every age, but what Art does to the Artist and to the lover of Art is the same in every age. It is a subtle experience which generates a definite psychological energy in the individual concerned. Gentry in its pages brings before you the material for many such subtle experiences. From here, you are on your own.

(6) Every man has really three men inside him—a *thinking* (intellectual) man, a *feeling* (emotional) man and a *moving* (physical) man. Gentry has something for each of them. Each issue has something worth cogitating about, not alone in the fields of art and philosophy, but in the fields of sport and fashion . . . in the field of *living*.

(7) Whatever Gentry does, it tries to relate it to you. And Gentry chooses subjects because they *matter*, not because they are popular.

(8) If you want a few minutes of light reading, don't buy Gentry. There are lots of cheaper magazines designed to give you that. Those who read Gentry should be prepared to think and to spend some time over each article, for while each article is chock-full of interest on the surface, it also has hidden depths worth exploring, and many hints of other related matters that are worth studying.

(9) Many of Gentry's articles in any one issue are designed to relate to one another, so that each reinforces the values of the others. To do this requires much time, careful selection, research and quality presentation. That is why Gentry is a quarterly rather than a monthly.

(10) Each issue of Gentry costs a lot. It costs you a lot and it costs us a lot. Compared with other magazines, it may seem expensive. But it cannot be compared with other magazines. Gentry does what no other magazine tries to do: It gives you articles of *permanent* value which you will want to read over again from time to time, and to keep in your home. Gentry's rich format makes it really a collector's book; if it were bound as books are usually bound, Gentry would cost five or six dollars per issue.

(11) Gentry is not designed to make you feel complacent, but to stir you up to thinking and feeling more about life and the values of life than you usually do. When we are successful in our aim—and we are not always so—you will find that you live more in a few hours with Gentry than you do in a few days of your normal routine.

You may Know what You Are Against... but do You Know what you are for?

Naturally, Gentry does not exemplify all of these things fully as yet. But they are goals, and this advertisement is intended just as much to suggest goals as to present facts. But Gentry has shown, and will as long as it exists unceasingly attempt to show, the significance and value to the individual of anything it touches, and suggest as far as possible where each department of life relates to every other department of life. Perhaps that is why, after a year of publishing, as we look at our subscription list, we find the names of many of the great men, the leaders in every branch of activity in America . . . why Gentry, in the opinion of many, many thousands of subscribers, is a magazine such as has not existed anywhere before . . . why Gentry has not only survived its first full year of publishing but has accumulated an audience of astonishing power and influence—the Praetorian Guard—the hard core of leadership in every field.

Perhaps you would like to see for yourself? You can get your first taste of Gentry by filling in the coupon and sending your check along with it. If you wish, we will try to start your subscription with Gentry's Fall Number* in the event this issue is still available when we hear from you. If the Fall Number is not available, we can start your subscription with Gentry's magnificent Holiday Number which is in preparation. For your own or gift subscriptions for your friends we ask that you use the accompanying order form.

GENTRY Empire State Bldg., New York 1, N. Y.

Yes! I should like to enter a subscription to Gentry starting with the Fall Number....Christmas Number....at the rate of $8 a year (4 issues).....$14 for two years.....I enclose $_____.

*Name*_____

*Address*_____

*City*_____ *Zone*_____ *State*_____

Bonus to New Subscribers: Your choice of 4 framable prints of old Locomotives, *or* 6 framable prints of Old Automobiles (each in full color on mat paper, approximately 4 x 7). *Check one:* Autos ☐ Locomotives ☐.

Please enter also the following Christmas gift subscriptions for Gentry, starting with the Christmas number, and send each of the friends listed your special gift card with my name as donor.

name	*name*
address	*address*
city, zone and state	*city, zone and state*

Many business executives are solving their Christmas problems with Gentry Gift Subscriptions. Gentry takes care of all details handsomely.

*It is difficult in words to give you an adequate picture of Gentry, which is repeatedly referred to as the world's most fabulous magazine; but the Fall number, for example, contains besides art tip-ons and actual reference samples of leather, fabrics, etc., a cellophane package of six individual reproductions of old hand colored steel engravings of famous colleges printed on rich mat paper and suitable for framing. The Christmas Number is replete with surprises and inserts designed to make it surpass any of the numbers we have so far produced. But see it for yourself.

XUM

For over half a century manufacturers in America of traditional and exclusive apparel woolen fabrics for men and women

STRONG-HEWAT & CO., INC.

40 EAST 34th STREET, NEW YORK 16, N. Y. • MILLS AT NORTH ADAMS, MASSACHUSETTS

LACE

The Lure of Lace

The Textile that has traveled
from the Palace of Princes
to the American Home

The delicate tracery of the fern supplies man's first inspiration for lace, in which he seeks to rival the perfection of nature

The Lure of Lace

Profile of a fabulous industry which found the means
to supply the aristocrat of fabrics
to the daily needs of an expanding mass market.

Any way you look at it, the very existence of the lace industry is an eternal proof of the heart-warming fact that man does not live by bread alone. He wouldn't, if he could. He would still be impelled and propelled by that high-priority need to express himself in terms of song, story and adornment.

That is precisely why lace was born. How long ago, nobody knows. Archaeologists have exhumed specimens of ornamental meshes, definitely in the lace family, dating back to 2500 B.C. The Bible speaks of *nets of checker work* and Homer makes similar mention.

Researchers have theorized that the idea of lacing threads could well have occurred to primitive people as a means of darning or repairing worn fabrics so that the repair itself would at the same time beautify the fabric. Other experts say that the knitting and twisting of threads of the frayed edges of garments probably constituted the beginning of lace. All this may be true, but the quest for the basic reason inevitably brings you to the one word — adornment.

Lace is the world's least practical textile. It does not cover, it does not protect. All it does is to make women more alluring. All it does is beautify the home. In short, all it does is help very handsomely in making life worth living.

Maybe you would be interested to learn what the United States Government has to say on the subject:

> Fancy lace is the aristocrat among textile fabrics; no class of textile fabric is so delicate and so difficult to make, and no other requires so long a time to acquire proficiency in the higher branches of production; none is more completely an article of voluntary consumption; none is more a creation of art, and finally no other more completely depends for consumption upon the originality, novelty and beauty of its design.

Everything about lace is difficult and different. Lace is not only woven. It is not knitted either. It is twisted. Operators of the incredibly intricate machines are called weavers or *twist-hands*.

The whole industry is deeply encrusted with tradition and steeped in romance. You cannot think of a Dutch painting without thinking of the lavish lace which was the symbol of success for the rosy and rotund burghers. These were bobbin laces, developed almost simultaneously with the beginnings of the needlepoint variety in Italy. The claim of Italy's priority, however, is disputed by Flanders, even in needlepoint lace.

Generally, it is difficult to find a subject duller or more prosaic than machinery, but if you delve into the history of lace you will find romance even in the evolution of the machine. It is said that there was an approach towards mechanization way back in 1561, when a lady with the resounding name of Barbara Etterlein Uttmann of Annaberg, Germany, invented so-called pillow lace. Two centuries later, in 1758, a material that was net-like in construction and lacy in appearance was produced on a stocking frame by Jedediah Strutt of Nottingham, England, which is still today the world's lace machinery center.

Some Early Machines

From then until Napoleonic times everybody and his brother was trying to duplicate by machinery the fascinating hand work of the needlepoint and bobbin lace methods. In many quarters a rather dim view was taken of these visionaries, who seemed to be trying to make a machine do the impossible. They were frequently put into the same classification as those worthies who sought to obtain perpetual motion.

Now we know that many of these wide-eyed pioneers were much more than visionaries. Important advances towards the goal of producing machine lace were being made. In 1802 Robert

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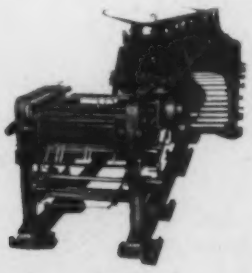

Brown was granted a patent for a netting machine and two years later Edward Whittaker invented something which he claimed could imitate pillow lace. The actual operation, however, did not get very far. Then in 1808, John Heathcote struck oil with his famous bobbinet invention, which turned out to be the precursor of the Leavers machine.

The Leavers Brothers

The manufacture of lace by machine immediately began to assume formidable stature in England's national economy. The exportation of a lace machine was punishable by banishment or death, but as soon as the Napoleonic wars were over, separate parts were smuggled into France, there to be reconstructed. The transplanted industry immediately took root on this new ground and Heathcote himself established factories on the other side of the channel, first in Paris in 1818, then in St. Quentin in 1826.

When Heathcote's patents ran out, so many textile inventors were trying *to get into the act* that from 1823 to 1825 England was said to be suffering from an epidemic of *twist-net fever*. In the meantime, John Leavers with two brothers and a few nephews had already discovered the great secret of reproducing lace by machine. His first device, dating back to 1813, employed the same principles as the modern Leavers machine. That was the real start of the production of fancy lace by mechanical means. It remained only to incorporate with the Leavers machine the motion of the Jacquard loom in 1837. Everything that has been done subsequently has been in the nature of refinement and improvement rather than of basic change.

While the manufacture of lace became primarily a French industry, the manufacture of the machinery stayed in Nottingham. Lace making is still one of the great industries of France, one in which the French take an especial pride. The United States was slow in getting started. Although machine lace factories opened up in Massachusetts early in the Nineteenth Century, the expansion of the industry towards its present scale did not start until the time of Theodore Roosevelt's administration.

Today's Accomplishments

Today there are 76 lace mills and 837 Leavers machines in the United States, requiring the services of nearly 10,000 people, who are responsible for an annual volume of business of approximately $35,000,000. It is a healthy industry, and in case you are not close to this branch of textiles you will be interested to learn that the lace industry is currently enjoying a decided upswing.

At this point one naturally asks oneself what the American lace makers have contributed over and above the accomplishments of the parent industry in Europe. We have improved on the processing, we have streamlined factory systems, we have invented methods of our own. But what does it add up to ultimately? The answer is: even more than most well-informed people appear to realize. Briefly, the American lace industry has brought the price of its precious product down to earth. In spite of the higher labor costs, it competes effectively with foreign-made laces.

The old economic barriers that kept lace the exclusive property of the rich are completely broken down. Even the cheapest lingerie is frequently lace-trimmed. The Colonel's lady has nothing on Judy O'Grady. As Mr. Kipling would have it, they're not only *sisters under the skin*, but they both wear lace immediately next to it.

Coming New Fibers

You don't have to be very old to remember when lace was something to wear only on very special occasions, assuming the wearer was in a sufficiently high income bracket to afford it. In other words, we are talking about something closely akin to a revolutionary upheaval in the American standard of dressing.

Lowering the costs is not the only contribution of the American industry. In the dear departed days, lace was not only far too expensive for the average woman, but far too fragile for daily wear. To the loveliness of lace, durability was gradually added. It is now made for *beauty and lasting duty*, as one manufacturer puts it. In other words, low upkeep and improved service have been injected into the product.

Then along came nylon and a new chapter in the history of lace was started. A new high in long wear and easy care was at once established. The advantages of nylon lace for nylon lingerie in particular were instantly apparent. Next, the superior practical qualities of this versatile fiber, not only for evening dresses but also for daytime dresses, began to make themselves felt.

* * *

The coming of the new fibers may well mark the beginning of a new lace era. In several of our leading lace mills the process of evaluating various acrylic and polyester fibers is well under way. Some excellent results have been obtained, and there seems little doubt that many of the new wonder fabrics will be trimmed with wonder laces.

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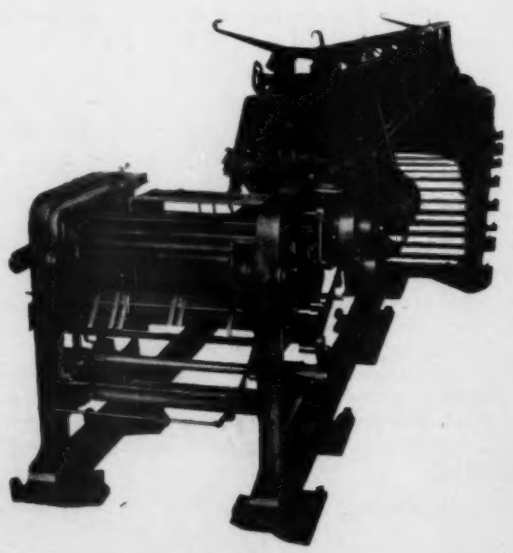
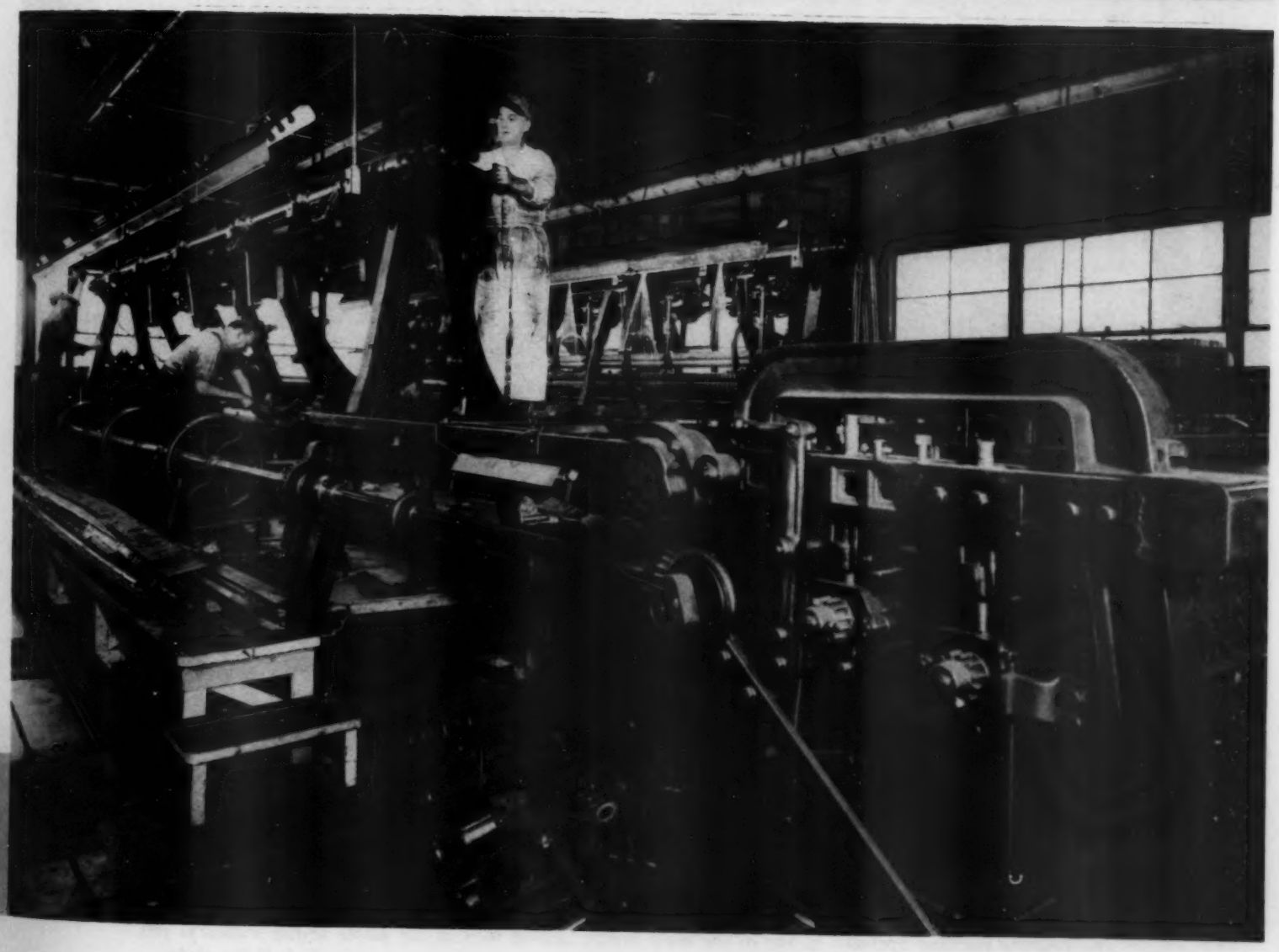


The Leavers Machine

At right, above: Show case containing various types of bobbins and carriages used in early Leavers lace machines. At right, below: Today's Leavers machine which requires the services of skilled maintenance crews.

JOHN JARDINE L
NOTTINGHAM ENGLAND



The Leavers machine operator is one of the most highly skilled men in the whole textile industry. His machine involves some 40,000 moving parts and may contain enough yarn to encircle half the globe.

THE INCREDIBLE LEAVERS MACHINE

It has been likened to the strength and intelligence of the elephant and the delicacy, patience and artistry of the spider.

PLEASE DO NOT labor under the misapprehension that the word *incredible* is a headline writer's exaggeration. A lace merchandiser with a quarter of a century's experience recently made the confession that he has never been able to fathom just what makes the Leavers lace machine tick. He said, "I have read all the literature on the subject. I have been shown through the mills by experts again and again. I have stood in front of the Leavers machine, beside it, in back of it, everywhere but inside it. Of course I get the general idea, but the real inner workings of this baffling piece of mechanism continue to elude me."

There is no question of the fact that we are talking about the most difficult and complicated textile machinery that the ingenious mind of man has been able to conceive and contrive. The Leavers machine involves some 40,000 parts, practically all of them in motion, most of them built to a tolerance measured in thousandths of an inch. It is an astonishing experience to watch this mechanical genie clanking away.

The THING stands nine or ten feet high. It weighs over 30,000 pounds and costs about a dollar a pound. Some 500 square feet of floor space must be allotted to house it. Two to three weeks are required to thread-up for action. When the operator throws the starting switch, his machine may contain enough yarn to stretch half way round the world, unbelievable as it may seem.

The Twist Hand

Note the words *his machine* in the foregoing sentence. Where usual textile weavers and knitters generally operate a dozen or more machines, sometimes many more, there is invariably one *twist-hand*, or weaver, for each Leavers unit, and he is one of the best trained and perhaps one of the highest paid individuals in the fraternity of textile machine operators. Union rules and regular practice through the industry require a candidate for the job of Leavers operator to work, after preliminary training as full apprentice for three years. It is only at the end of the three-year apprenticeship that he becomes a qualified Leavers operator.

To give an idea of what it takes to develop the technicians and craftsmen who supply the machine operators with their patterns, let us start with the designer, for it is on his drawing board that each new pattern is born. Obviously he must be an artist, because he must render a realistic drawing of each new pattern in the form of a design, correct to the smallest detail. He must know the Leavers machine inside out to keep his creative thinking in a practical groove. Otherwise he might dream up designs possibly too costly or impracticable to reproduce in lace. He must be sensitive to fashion trends as well as to preferences and prejudices of the various garment trades for which his designs are destined. In other words, it takes a technician-artist-stylist combined to fulfill the exacting assignment of lace-designer.

When the designer has done his work there is on the board a finished sketch, exact size, with the design repeated sufficiently to show the flow of the pattern. At this point the draftsman comes in. He takes the design and enlarges it many times, then translates it into mathematical and mechanical terms on a highly complex chart. On this chart there is a number for every single thread. These numbers represent exactly each movement, combination and pass of every thread at every moment during the entire process. The draftsman, therefore, must also possess the visual ability of an artist, together with a profound mechanical mind. He lives in the upper stratosphere of textile mechanics. He must be an inveterate experimenter, indeed, almost an inventor, for he is constantly endeavoring to create patterns that have never before been turned out by any machine.

Just as the design becomes a network of numbers that govern the mechanical motion, so the numbers now become a guide that indicates to a Jacquard card puncher the position of the holes which are to be punched on the successive Jacquard cards. These cards are then tied together to form a continuous band, which repeats like a piano-player roll. The Jacquard rolls determine the actual design of the lace very much as the player rolls control the tune that comes out of the automatic piano.

A Comparison

Sounds complicated, doesn't it? That's nothing. We're only getting started. The Jacquard motion does not make the lace; it merely governs the pattern which the Leavers machine makes into lace. The actual lace making consists of intertwisting two or more sets of threads: the warp or beam and the bobbin threads.

A comparison with other textile procedures will help in visualizing the extraordinary intricacies of the actual making of the lace. In the case of woven fabrics you have some intricate patterns like fancy brocades, which in fact employ the same types of Jacquard motion as the Leavers operation. Even the most devious of these textile designs, however, are executed by one set of threads that goes lengthwise — the warp — and one that goes crosswise — the filling. They have nowhere else to go. The machine is limited to two-directional functioning: up and down or left and right. Warp knitting involves looping and knotting, but it also remains a two-directional operation. But in a Leavers machine, instead of one shuttle carrying the filling back and forth between the warp threads, there are some four thousand bobbins, each as thin as paper and spaced at nineteen to the inch, which slide to and fro between the shifting warp threads to form the lace fabric.

Thus when you make lace, it is an entirely different story. The threads have to go in many directions at once. To appreciate something of the magnitude of the mechanical problems involved all you have to do is to pick up any piece of lace, even the simplest, and ask yourself how it is possible for a machine to turn out anything so amazingly complicated.

And there is no end to the complexity of the patterns which a mill can make on a Leavers machine. If you are willing to pay the bill you can get a picture in lace of Custer's Last Stand or a Toulouse-Lautrec Can-can dancer or anything else you want. And you can specify colored threads, too.

Something Special

You could continue endlessly expatiating on the extraordinary demands made on mills which produce our lace. Everything connected with the industry demands something special and extra. Ordinary yarns, for example, will not do. Yarn for lace has become an expression denoting the very top quality of cotton yarn manufactured. Cotton lace yarns, it should be noted, must be given more twist than yarns for weaving. A great deal of special manipulation is required.

Nor are nylon yarns, so widely used today, necessarily delivered to the mills all ready to be threaded on the bobbins or warp beams. Even the highly prized dimensional stability with

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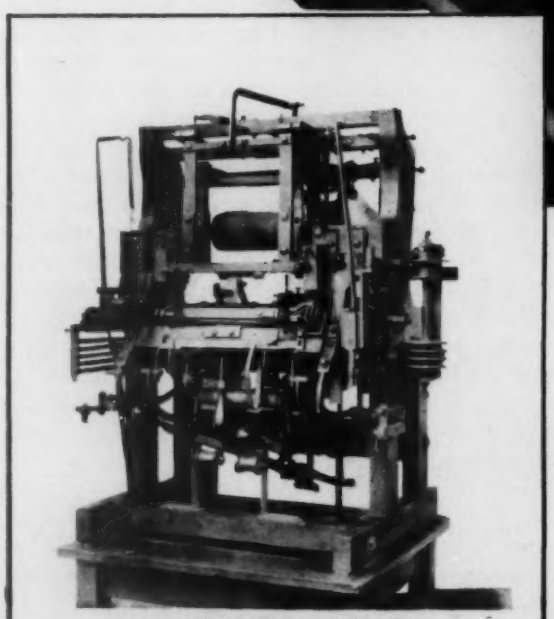
XUM

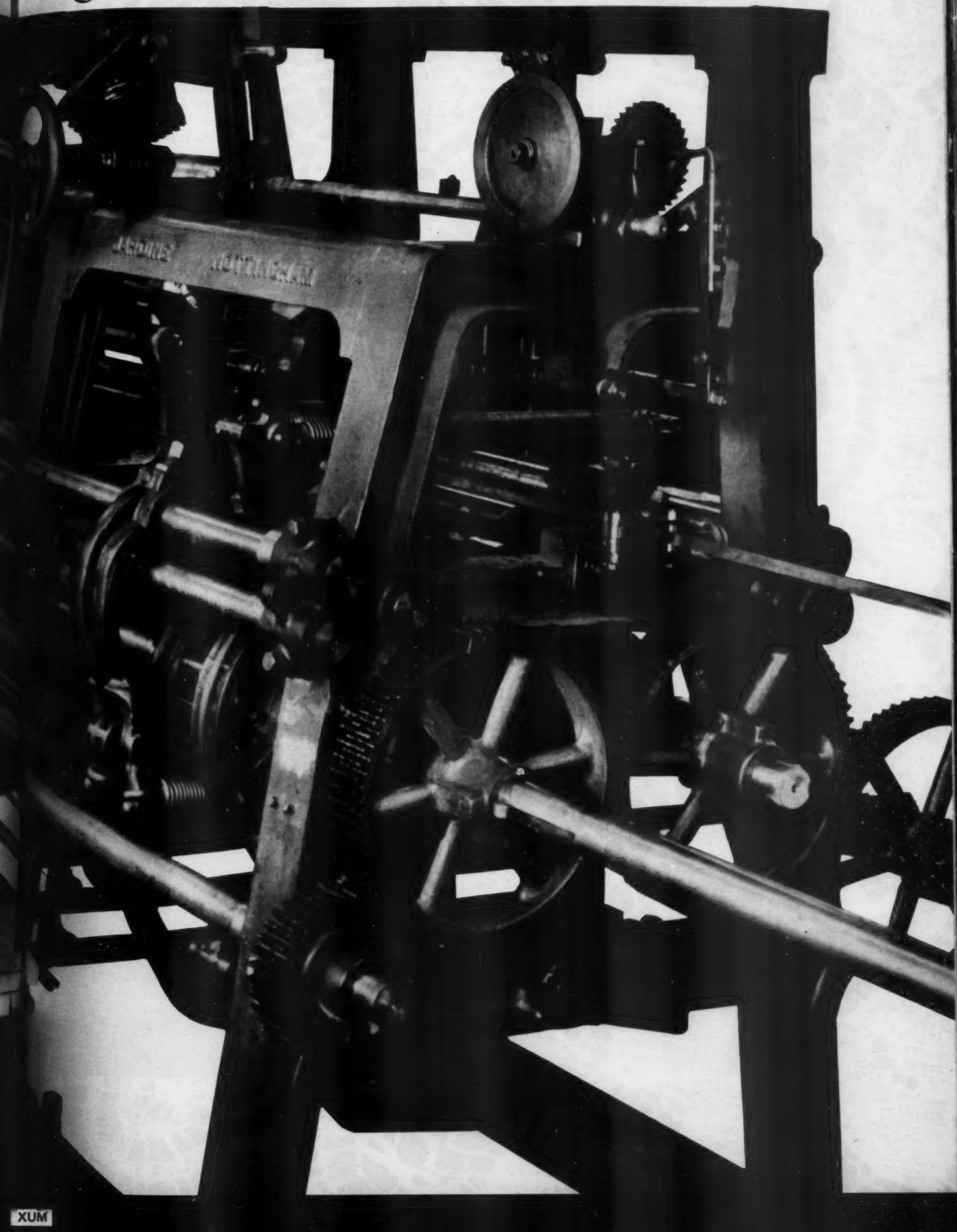
Lace is made on the World's La



Leavers Single-Tier Lace Machine
COURTESY NOTTINGHAM CASTLE MUSEUM

The Leavers lace machine has been compared in strength to the elephant, and in delicacy of performance and creative ingenuity to the spider.

Largest Textile Machine...



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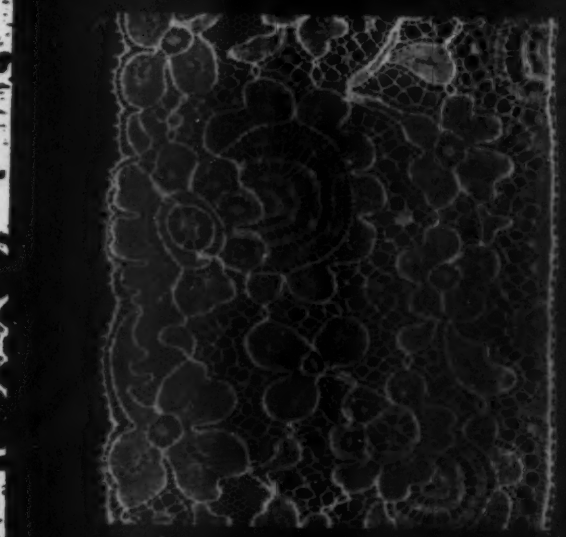


Lace is a labyrinth of intricate design, of designs within designs, of delicate arabesques and finely-drawn geometric patterns.

which nylon lace is endowed is imparted by special processing.

There are a good many sixty-four dollar questions to be answered. Why have the great American textile machinery companies shied away from trying to make lace machinery? Why have they chosen not to compete in the manufacture of a piece of equipment that brings in a $30,000 check per unit? It is certainly not typically American to let Europe make our machinery for us. The Britishers hint politely that we would find it very hard; that it calls for engineers and technicians who have inherited their unique skills from their fathers and grandfathers; that each machine built is custom made and that no two are exactly alike. They say that we do not even fabricate the kind of brass needed for the 12,000 bobbins used on a single medium sized machine.

Here is another peculiar thing. Though there are numerous highly rated textile schools of collegiate and post-graduate rank in the United States, and though several of these are world famous, none of them offers anything like a complete course on the manufacture of lace. The tyro has no alternative but to become an apprentice in the time-honored manner.

All the personnel of our lace mills originally were drawn from the other side of the Atlantic. You still find British-born and French-born twist-hands, designers and draftsmen, as well as executives, in the industry, but today these devoted immigrant craftsmen are represented largely by their heirs of craft if not those of kin.

* * *

There has not been any basic change in the machine, but its size and operation as well as the functioning of the industry as a whole have greatly improved. That is the real reason why lace, the ultimate in technical accomplishment and textile perfection, can be placed within the reach of the mass market and stands today as one of the few woven luxuries that practically everyone can — and does — afford.

LACE OVER THE COUNTER

The merchandising of lace, from the mill to the consumer, constitutes an operation specialized in its styling, presentation and final retailing.

AT HER CORONATION in 1837, nineteen-year-old Queen Victoria wore a dress made of lace which cost one thousand pounds. This was topped by Napoleon III, who gave his Empress Eugenie a 200,000-franc lace creation . . . the equivalent of $40,000.

And costly splendor on an imperial scale is by no means confined to the pages of history. You can still pay a thousand dollars for a lace handkerchief that took some person with infinite patience about three years to make.

At the same time, Mrs. Jones or Mrs. Brown, who are not in the market for museum pieces, can walk up to the lace counter of their favorite store and buy all they want of lace that is as lavish as it is lovely for $1.95 a yard, 36 inches wide. At the adjacent pattern counter they can choose from a wealth of daytime or evening dress patterns especially styled and designed to be made of lace. If they have never made a lace dress before, they can get helpful hints from the sales girl or from the company that made their sewing machine. They will be delighted to learn that the relative looseness of lace dresses renders them much easier to make than tailored types that require more detailed fitting.

The chances are, however, that Mrs. Jones or Mrs. Brown will pay either $2.95 or $3.95 a yard, for these are by far the most active price levels throughout the country. Our friends may also find they have bought several yards of lace edging, if their sales girl has been smart enough to suggest buying a plain slip and trimming it with lace. Or any one of the innumerable kinds of lace fancy work may have been introduced into the sales talk, with gratifying results for all concerned.

Obviously, a great deal must have gone on backstage before this little sales scene could be enacted. There are many conditions and complications peculiar to the industry with which to reckon and it is especially interesting to note how lace differs from other textiles in its styling, merchandising and retailing.

Fashion the Motivating Force

Other textiles may be modified or governed largely by utilitarian considerations, but fashion is the sole motivating force of the lace industry. The intricacies and involvements of styling and merchandising lace are staggering. To put together a complete line, the mill or distributor must provide their salesmen with several dozen different patterns of tiny *baby edges* alone. This number will be boiled down to about ten patterns by the department store buyer. The same elaborate presentation of selections is expected right across the board.

It is plain to see that buying and merchandising of lace certainly is no job for amateurs. Orders must be placed far ahead, and the financial commitments are heavy. The turnover of lace by the yard is slower than for the average retail item so that the profit ratio must be higher. The buyer must be thoroughly posted on all end applications and uses. This entails a professional knowledge of evening elegance as well as daytime apparel, of underwear as well as outerwear, and the buyer should have a good practical grasp of home sewing especially.

An equivalent familiarity with fancy work is likewise imperative, much more so than those not acquainted with the situation are likely to suppose. In fact, heavy selling of lace for fancy work makes December one of the big months in the lace section. You would be surprised at some of the sales figures that are rung up for gift items, such as lace for ornamental pillow slips and gold lace for lampshades.

Retail Personnel

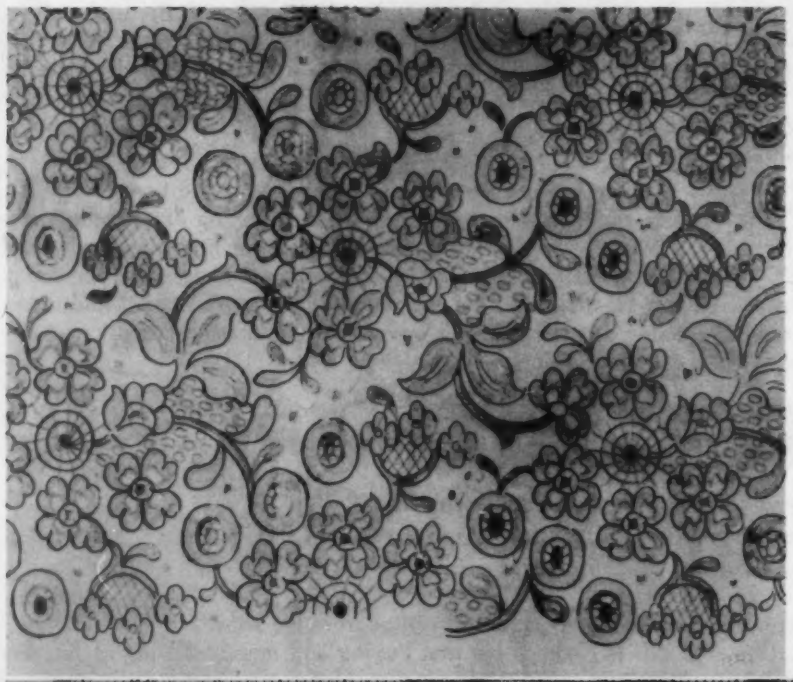
How is the store going to find the right kind of buying and selling personnel for the difficult selling involved? That is probably the most perplexing of all the retail problems. In the first place, a girl must *know* lace in order to be able to sell it. Second, she must love it. The two qualifications are indeed inseparable, since no one could possibly endure the rigors of the long apprenticeship required to learn about lace without first succumbing to its lure.

A long and formidable list of technical terms must be assimilated. To start with, the new girl must learn all the different types and kinds of lace; like alencon, malines, chantilly or valenciennes. The learner must then absorb all the traditions of the sort that are expressed in the various classic pattern-motifs; such as the rose, the daisy design, the goose neck, the lily of the valley. Again it is necessary to know what can be done with lace on a sewing machine and by hand stitching. The sales girl must be prepared to give fashion counsel. She must know what kind of lace to use in each case and how to use it.

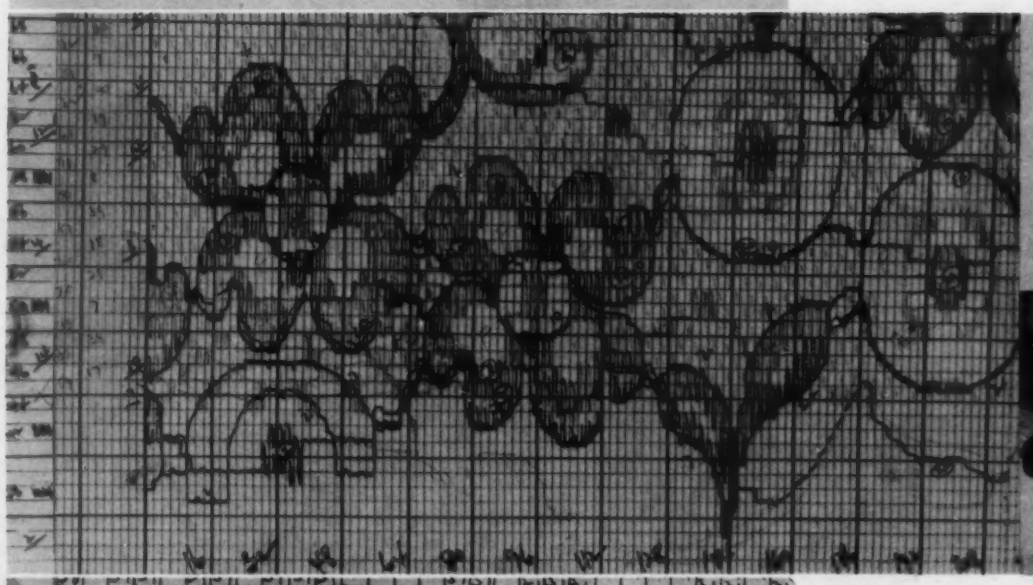
It is not like selling umbrellas on the street floor on a rainy day. The lace counter is no spot for an order taker. The girl who makes a success of selling lace by the yard should ideally have a little touch of the old *twist fever*. Above all, she must believe, consciously or unconsciously, that a thing of beauty is not only the proverbial joy forever, but its own abundant reward.

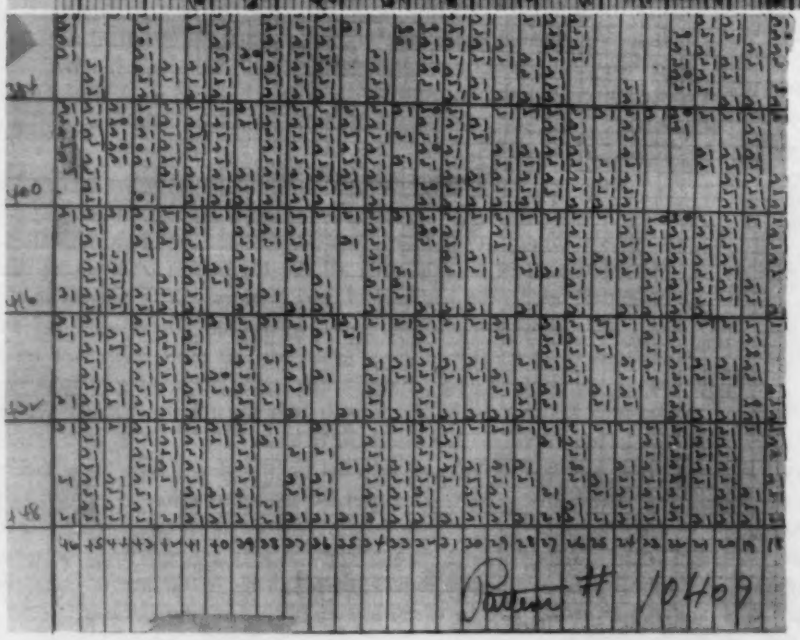
The making of Lace from the yarn to the finished fabric is shown on the following pages:

How Lace is Made... Key Stages in its



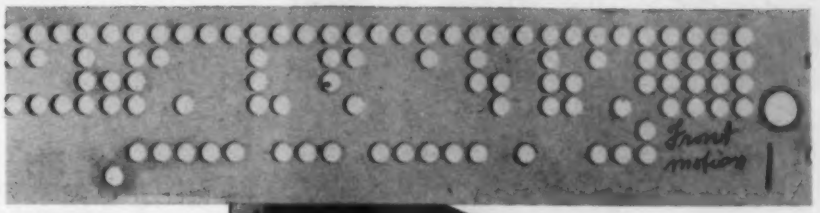
IT STARTS WITH *the sketch drawn by the lace designer, tinted to show the contrasting effects of the pattern, in actual size of finished lace. The draftsman, shown at work below, greatly enlarges the sketch upon specially squared paper and indicates, in inks of different colors, the position and sequence of each thread used in the whole design. The resulting chart of the*

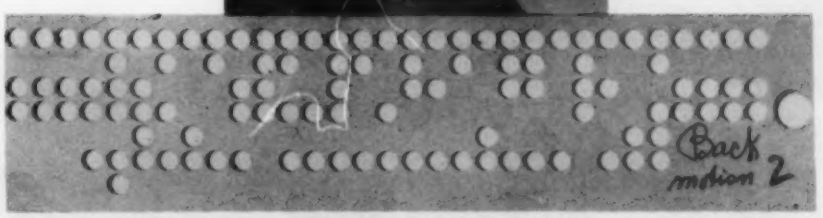




actual lace construction, shown at left, governs the whole subsequent operation. Next, the draftsman's chart is translated into a sequence of figures. There is a number for every thread and every movement. Blank spaces in the chart indicate the repetition of the preceding number.

Manufacture by the Leavers Machine . . .

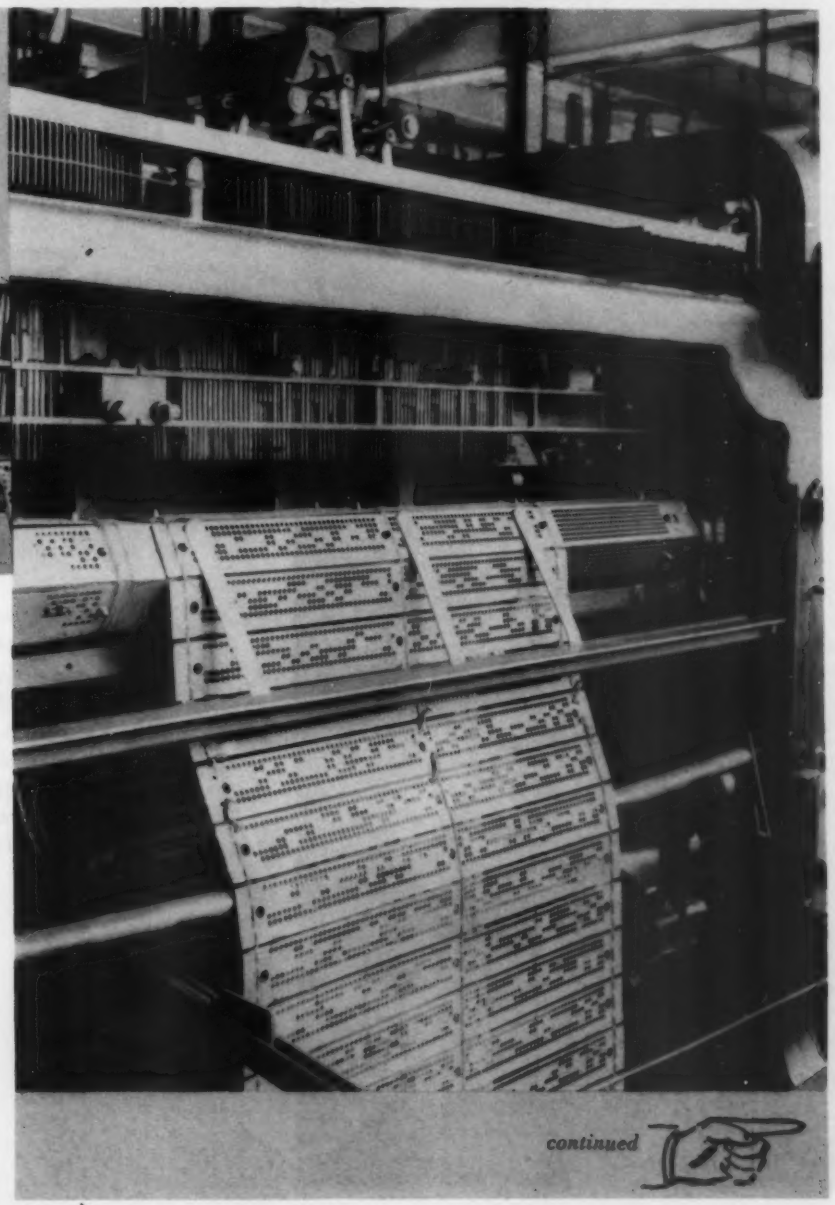




The previous sequence of numbers is in turn translated into a series of holes punched into a Jacquard card, like the holes on a player piano roll.

The cards are laced together in correct sequence to form an endless band.

The Jacquard cards are placed in position in the machine directly under a set



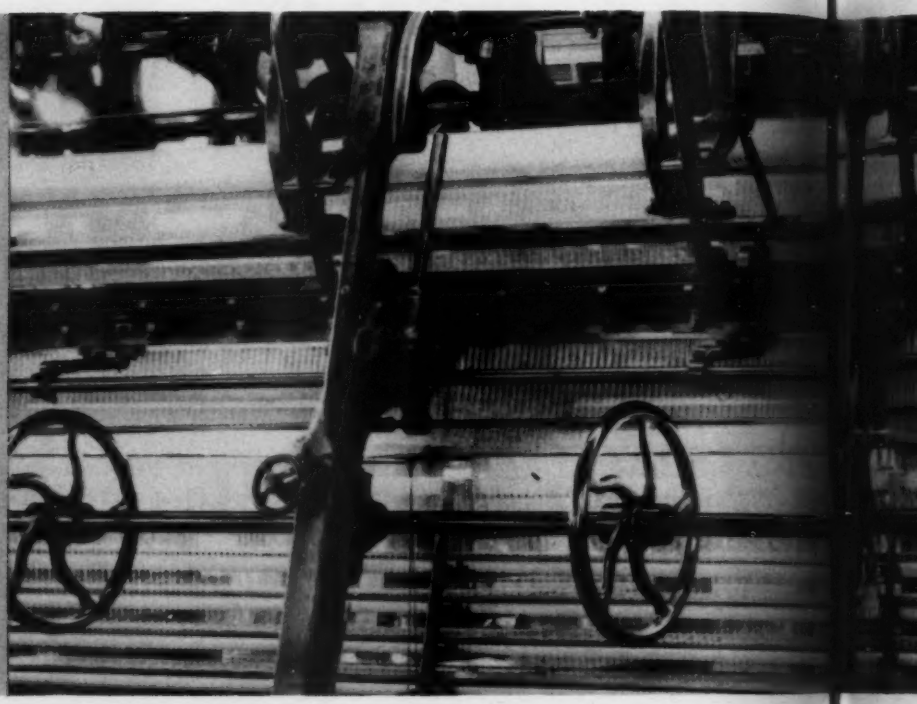
of steel rods. As the card rises, all rods not directly over holes are automatically pushed up, as shown in the picture at left. This motion determines the pattern, the Jacquard motion constituting the thinking brain of the Machine.

(please turn)

continued

However, before the machine can operate, certain preliminary processes have taken place. Among them are the winding of bobbins, several at a time, shown above at left. Next, at left, below, the bobbins are fitted into carriages and the carriage is then threaded.

The warp threads are now wound onto beams which are placed in the machine after winding. The ends are brought through the machine and

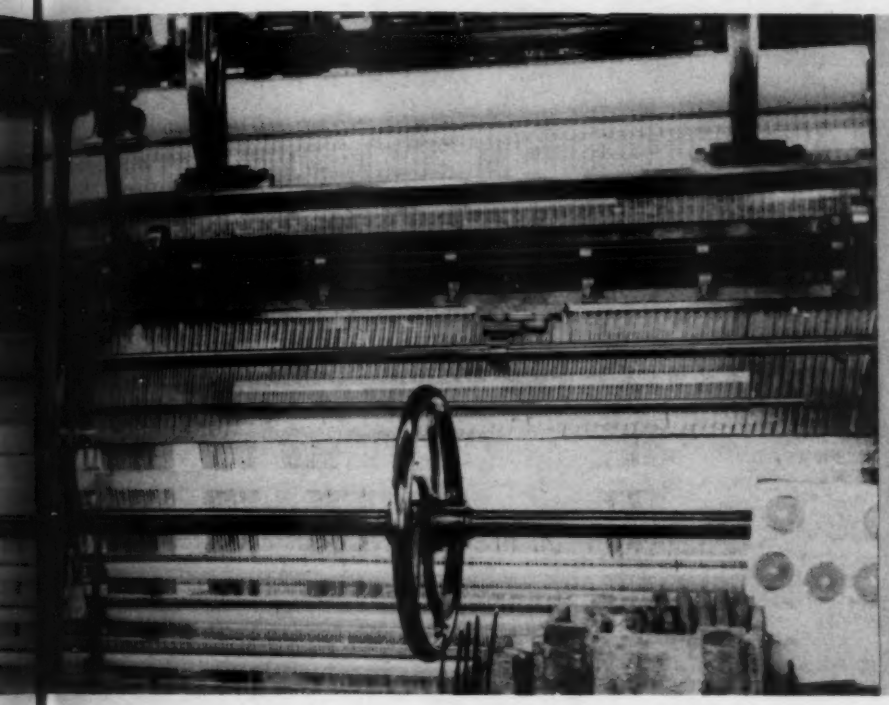


the new warp is tied in. This operation which is long and skilled is shown at left, below.

When all the preliminary processes have taken place the Leavers machine is set to work. This operation is the central pivot around which the whole organization of design, preparation, maintenance, manufacture, converting and finishing revolves. In the illustration at center the completed lace is at top of the machine, the

beams are below, seen through a screen of warp threads; in between is the row of carriages which contains the bobbins.

After completion the lace must pass through the final finishing processes before it is ready to be shipped. First it must be examined for faults and mended if necessary. Then, after washing, it must be dyed (above, at right), sized and framed (below, at right) to give it



perfect evenness and finish.

Drawing the threads which hold the widths of lace together separates them (above, right) and the lace is then ready for winding on spools or jennying, (right, below). The flat cards wound with lace must lastly be subjected to hydraulic pressure to save packing space. The finished lace is then shipped to the customer — retailer or manufacturer as the case may be.

Lace . . . a fashion favorite from R

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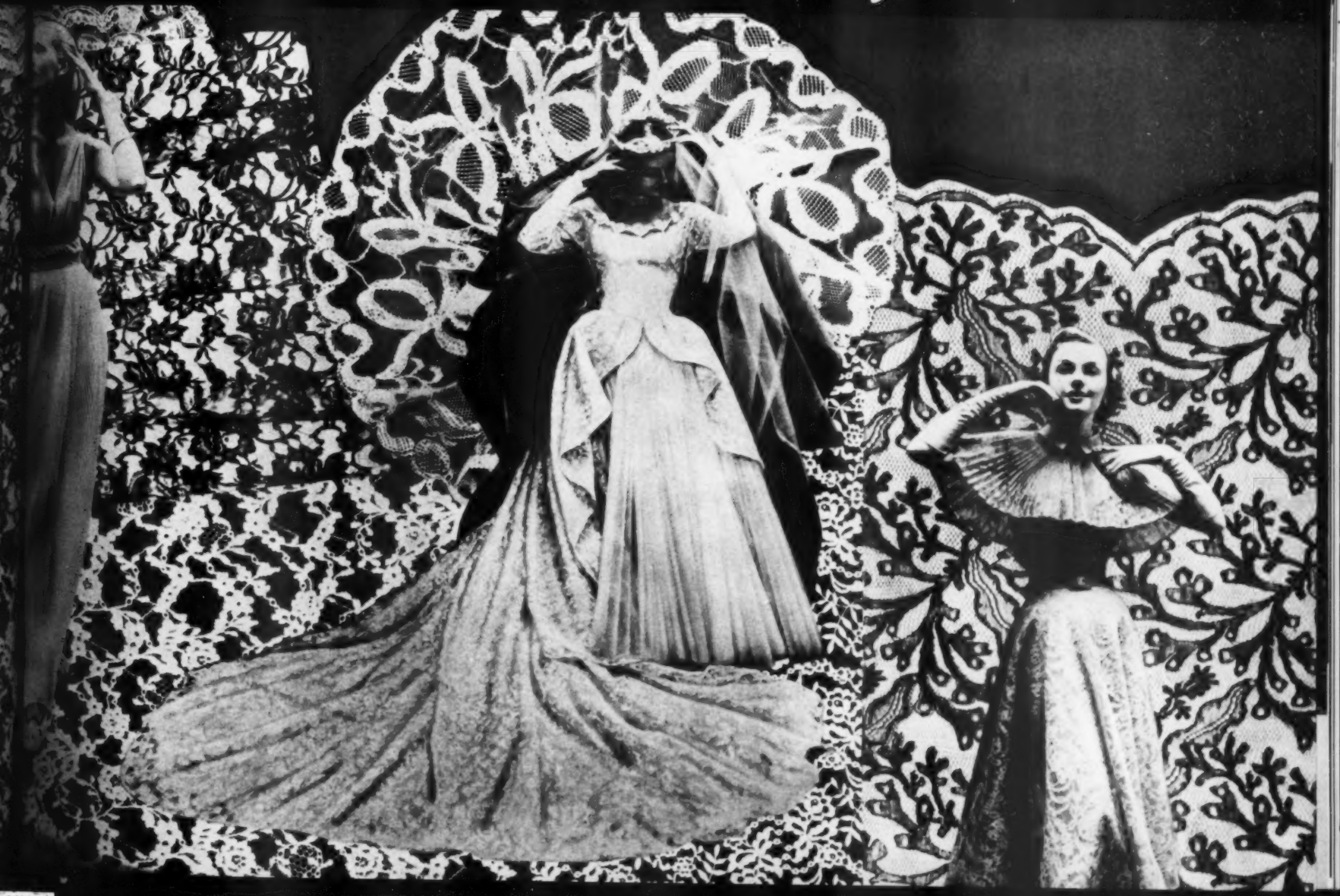
Renaissance to the present day.



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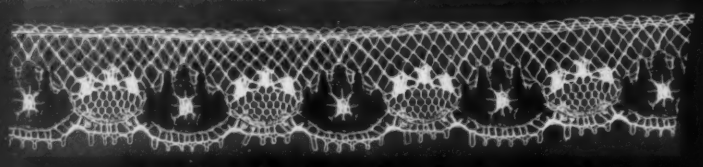
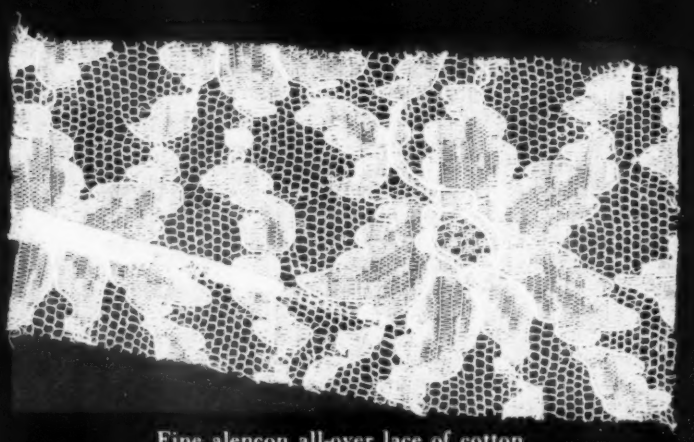
Photos courtesy Vanity Fair

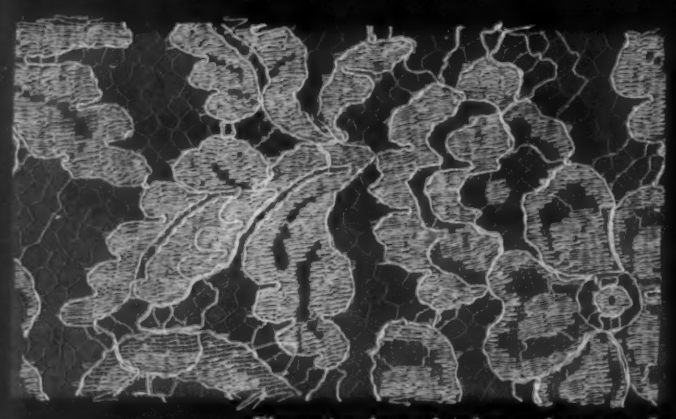
Some Fine Examples of Elegance, Var



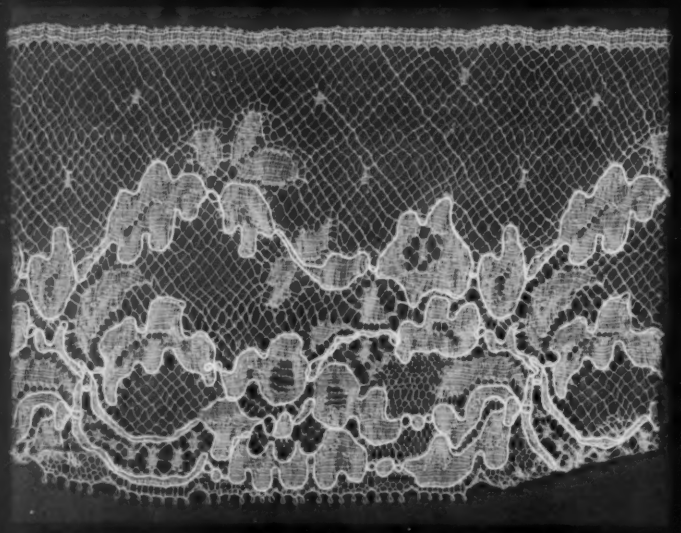
Picot edge valenciennes lace, in cotton, with designs in fast color against white background
by AMERICAN FABRICS COMPANY



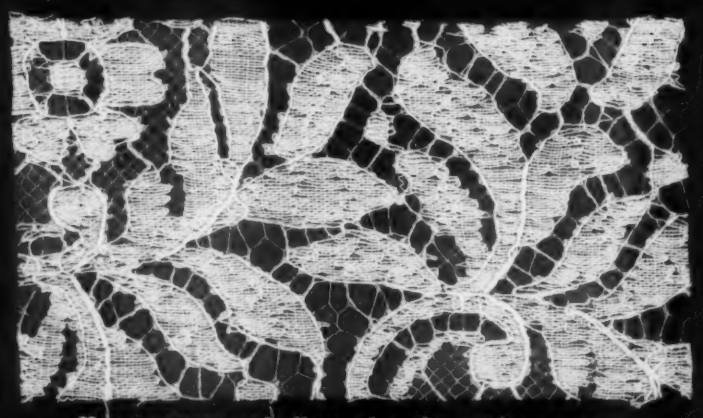
Fine alencon all-over lace of cotton
by THOMAS WILSON & CO., INC.



Florentine lace of nylon and acetate. In colors and white for lingerie and dress fabrics
by AMERICAN TEXTILE CO. INC.

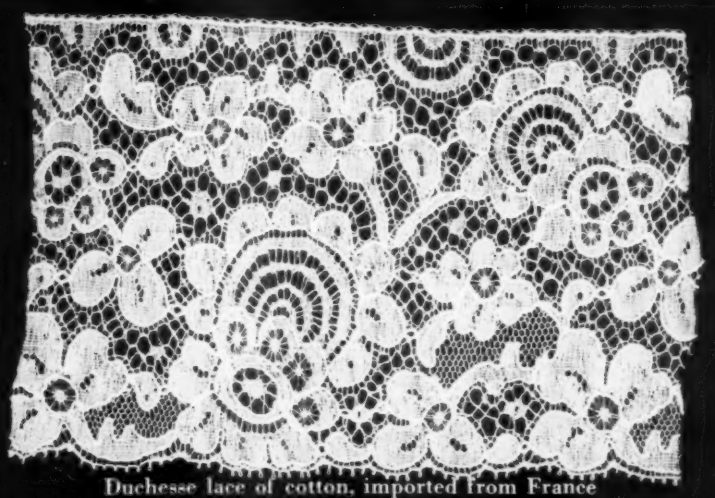


Calais valenciennes lace, 100% nylon, with corded edge
by ZENDMAN LACES INC.

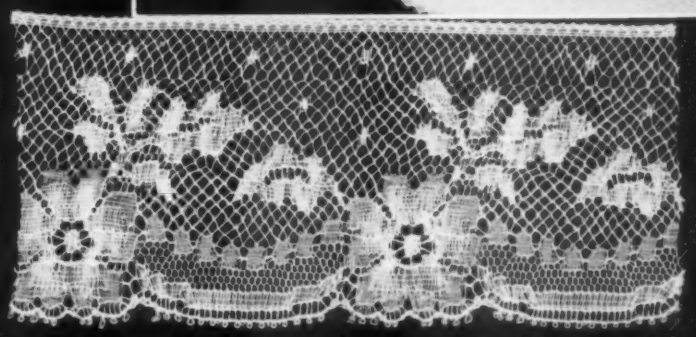


Heavy cotton cord all-over lace for outdoor wear
by NORTH AMERICAN LACE CO. INC.

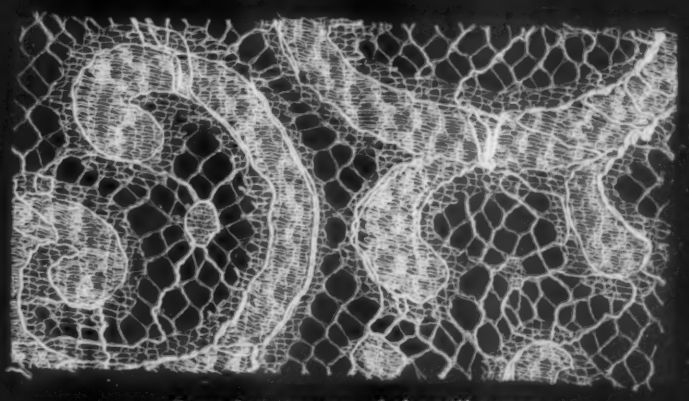
Variety and Taste in Lace



Duchesse lace of cotton, imported from France
by THOMAS WILSON & CO., INC.

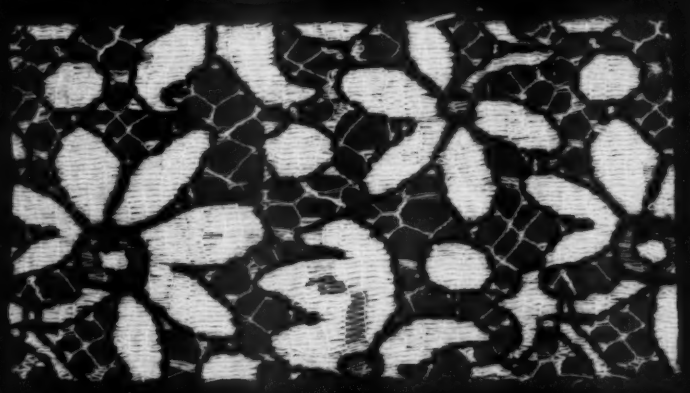


Calais type of valenciennes lace, in cotton, with scalloped purls edge. Colored threads are yarn-dyed and woven in
by NORTH AMERICAN LACE CO. INC.



Gimp lace, cotton, of chantilly type
by LIBERTY FABRICS OF N. Y., INC.

Duo-tone lace of silk and rayon, chantilly type
by LIBERTY FABRICS OF N. Y., INC.



A two-tone guipure lace of cotton and rayon, cross-dyed
by MAX MANDEL LACES INC.

An all-nylon, center gimp, chantilly type lace
by NATIVE LACES AND TEXTILES INC.

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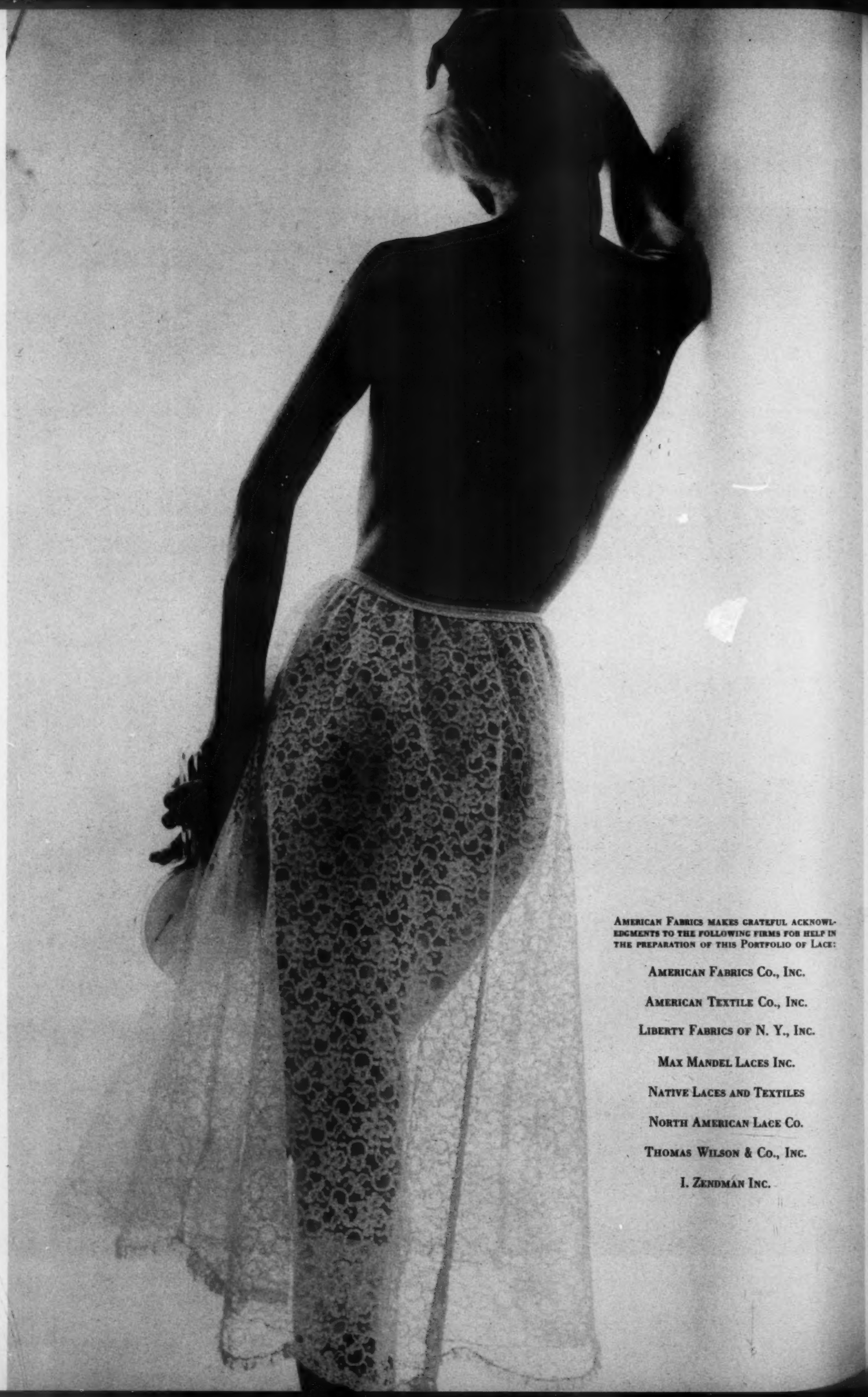

AMERICAN FABRICS MAKES GRATEFUL ACKNOWLEDGMENTS TO THE FOLLOWING FIRMS FOR HELP IN THE PREPARATION OF THIS PORTFOLIO OF LACE:

AMERICAN FABRICS CO., INC.

AMERICAN TEXTILE CO., INC.

LIBERTY FABRICS OF N. Y., INC.

MAX MANDEL LACES INC.

NATIVE LACES AND TEXTILES

NORTH AMERICAN LACE CO.

THOMAS WILSON & CO., INC.

I. ZENDMAN INC.

INTERVIEW with Dorothy Liebes

AMERICAN FABRICS poses 8 questions

Q. How can the free flow of creative talent into the textile industry be encouraged?

A. The free flow of creative talent into the textile industry is, I think, encouraged by the happy climate of *mutual trust*, mutual desire to bring forth something useful, beautiful, and timely.

Q. From your experience in translating handwoven patterns into power loom products, how can the handweavers and mills cooperate more to give free flow to creative inspiration?

A. The handweaver can't be a craft-bound arty person of the ivory tower variety, but must have knowledge of the mill processes and limitations. However, he must proceed to create and give freely as if the sky were the limit; often the impossible of one season is the success story of the next season. The handweaver is the virtuoso at his medium and drawing board, and he must feel no inhibition about giving freely of all his creative ideas. Work is the key. Work plus honest-to-goodness validity of creative thinking and knowledge.

The mills can nurture this necessary creative power plant by intelligent guidance and criticism, plus sharing their knowledge of machine limitations, plus a lot of take-a-chance spirit and gambling. Nothing is so wonderful for a designer as to work for and with a mill group or leader with imagination. Alas, too often mills hire a designer for the express purpose of exploitation, and then proceed to frustrate every creative idea with machine-like repetition.

Q. What are the main sources of creative inspiration open to the textile industry?

A. One does not need to borrow from the past; the day-by-day life pattern is exciting and vast. In the field of textiles for shelter, the chief inspiration is Architecture, the Mother Art of all. What is more inspiring to a textile designer than to gaze on a new set of blueprints and drawings of a Frank Lloyd Wright house, a Lever house, a Mies van der Rohe apartment, or a Gropius, Wurster or Belluschi housing project? I believe firmly in the growth of the human being culturally as a human storehouse. A well integrated knowledge is the mainspring to feed a lively creative imagination. Certainly we are the sum of all that has gone before us, and we must learn the past; therefore I give you anthropology as the basic necessity for a textile designer. One knows all the past art forms, but one strives to tell the creative story of today in terms of today and the future.

Q. How can the handweaver become better informed on the specific needs of the industry in apparel fabrics, furnishing and industrial fabrics?

A. I give you American Fabrics!

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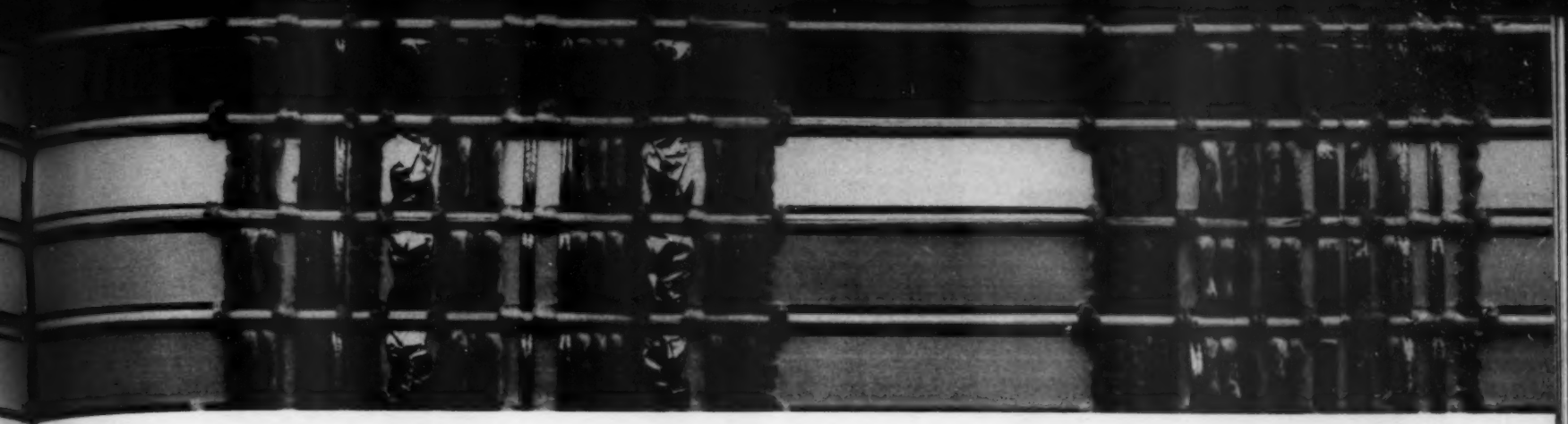

Q. As a designer in color, how can the color limitations of a mass market be circumvented to produce fabrics that are popular, yet of fine design?

A. Color is the elixir of the designer's life. But there are no limitations, really. Color cycles, whether induced by man-made obsolescence motives or natural urge for change, are not limiting, but stimulating. Color is heady stuff, and the more one lives with it (as the 20th Century man does), the more one can take and digest. After all, it isn't *the* color, but the combinations of colors and values. Skill and taste regulate the inspired color performance.

Q. Is it possible with machine industry to produce some equivalent of folk art — an art popular in scope but of high creative quality?

A. If you mean by folk art mass participation, like the Colonial bedspread, the hooked rug, the knit sweater so fabulously wrought by the Irish fisherfolk, then the machine won't produce a folk art. But a *popular* art form by machine — yes. We have today the simple, yet handsome use of machine-woven-wood blinds.

Perhaps the Idea is what counts, and whether it is produced by hand or machine doesn't matter. So it may be possible to bring forth the equivalent of a folk art by developing a highly creative popular art, mass produced. Look at Hope Skillman's cottons, or the tweed look in American fabrics which was initiated by my hand weaves of 20 years ago and is now done by industry.

Q. How far are the hand qualities of variation in color, blown-up designs in texture, etc., of value to industry?

A. The pilot shop of a first-class mill can get an infinite amount from a hand-woven model; witness the fact that in the past 25 years in America the hand-weave look has been translated by most mills. Even the tweeds of the apparel field spring from the hand-woven models. The mill man treats the hand-woven piece as he would a painted or rendered design in the flat, but the dimensional quality of a real weave gives him a chance to appraise its draping and performing qualities.

Q. What about the future?

A. The future, to be general, seems to me an individual matter. Forward looking and thinking mill men are rare indeed. Most mills want to produce within the mass market turn-over pattern. Many mills ban any true innovation except the most cautious changes from last year's competitors' success numbers. But old as the struggle is between the artist mind and the business mind, they need each other more than ever. In this highly competitive age, a touch of design genius may tip the balance sheet to big profit.

Illustrations: The border strips at the top are window blinds; filler, aluminum strips and natural bamboo; warp, cotton chenille, silk noil, lurex braid and heavy spun. The various boat shuttles are from Dorothy's workshop.

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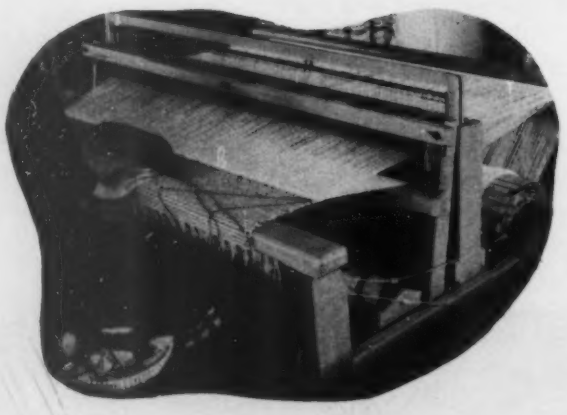
In the new Liebes Studio

Warp spread showing weaving of divider wall. Another view is shown at extreme left of this page. Off the loom, mending of the divided wall after tension is released. The decorative good luck carp comes from San Francisco's Chinatown.



At left of this page: Weaving of cloth on a four harness Gilmore loom. Note the loom's low construction. Large photo on the opposite page: a triple beam six harness loom.

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In the new Liebes Studio

Above: Weaving a divider wall on 10½-foot loom. The sliding seat is a special feature.

Below: Examples of woven draperies, window blinds and divider walls. Note the stress on the vertical designs and pile weaves.

The universality of the language of weaving is exemplified by this lovely and gifted Korean weaver. The loom on which she is working is often referred to as the Rolls Royce of hand looms because of its polished hard wood, its perfect balance, its ease of control. It is a Gilmore loom.

• *END*

Knits are a busy girls best friend — for years I've knitted my own — loving texture + color as I do it was fun to see it come off the needles. Now - it's exciting to find this same hand made look can be duf created by machine —

THE CONTRIBUTION OF THE

factor in maintaining leadership of the American fashion and fabrics in it is a persistent, powerful stimulus to consumer demand. One designer periodic interruptions and creative blocks imposed by seasonal lines, is of the functional needs of American life and activities. She does not requirements. In this she functions like an industrial designer, employing Miss Cashin's approach emphasizes the importance of the free-lance ficant concept. BUT LET BONNIE SPEAK FOR HERSELF . . .

This I believe . . . The changing pattern of living is making it necessary for the fashion industry to change its approach to design. This period of change, though bound to create casualties, is also a healthy one. It should make for a greater rapport between manufacturer, designer and retailer. The fashion industry is based on ideas. Through ideas it makes money. No idea can reach the consumer unless dozens of little wheels cooperate to make it work. But first, the idea, person or designer must be nurtured. The care and feeding of the designer in America is the direct responsibility of the whole industry. The very nature of the artist designer, because he is what he is, must grow in a sympathetic climate. France realized this and capitalized on it long ago. The American designer for the most part must pull himself up by his own boot straps. The wear and tear sometimes kills him off. This is to the detriment of the entire industry.

To begin, our fashion language needs re-editing. A so-called designer may be anything from a tailor-technician to a stylist who simply views collections and then adapts. There is nothing wrong with either of these vocations, but they should not be confused with designing. The creative designer is inventive and is able to achieve a certain *look* because of a certain attitude toward life and living conditions. A sense of fashion direction is as important to the designer as a sense of political direction is to the statesman. Though the old cliché says *There is nothing new under the sun*, there is much that has been undiscovered. And it's this *fresh eye* turned to our time which distinguishes the real designer from the *cultured* one — an awareness of today's living problems, and a curiosity about tomorrow's.

Personal . . . Long ago in the mid-thirties when I first arrived in New York to try my wings, I remember having a talk with a woman executive in our industry. Very starry eyed, I poured out my heart. I said I wanted to design the most beautiful clothes in the world . . . evening clothes, wonderful coats, country things . . . everything I myself wanted to wear and own. And then, just for fun I'd love to do the most fabulous ballet in the world; and maybe I'd do a picture, too, and dress the heroine like no heroine had ever been dressed.

I remember the executive's expression, trying to hide a smile, and her

... as American Fabrics has often stressed, is perhaps the most vital ... one of the most significant elements in keeping sales at a high level, since ... consistently reflected a pattern of freedom, individuality and opposition to ... California-born designer bases her inspiration on her personal interpretation ..., but rather new items which are ever-responsive to changing trends and ... skill to meet specific product needs wherever and however they may develop. ... field as both consultant and designer, and represents a new and signi-

very firm advice for me to specialize. Be a sportswear designer, she said, or a dressy designer, or a theatre designer; but you'll *never* succeed if you don't specialize! But — I *did* want to specialize in my-kind-of-a-girl-for-a-certain-way-of-living. I felt I'd only be part designer if I designed only part of her wardrobe; and if it inspired me to do theatre fantasies what was wrong, if I did it well?

I was young then and I've had to prove what I believe in — *the hard way*. For any non-conformist the going is tougher; resistance to ideas seems to be a natural thing. It's easier to follow in paths well cleared. I'm convinced that too many ideas are lost to the consumer. There are many valid reasons for this, and real production problems are part of it. But the fact remains the bottlenecks are there and the consumer is making her absence felt strongly enough for industry to start probing.

PRINCIPLES FOR WORK . . . 1. Determine the audience you want to reach. 2. Visualize a kind-of-girl against a kind-of-background. 3. Consider the whole figure. Compose a costume as one would compose a painting within a frame. 4. Test it yourself; wear it, live in it. 5. Keep it simple; keep it quality. Quality does not necessarily mean cost. 6. Travel-ability is a must. Wearable clothes are not born in an ivory tower. 7. Have patience. Ideas take often a long a-borning period before taking a first breath.

My Problem . . . I must try to evaluate the tools of our industry and how best to use them. As an artist, I must find a way to work that permits emotional satisfaction in ideas realized as well as financial security.

Bonnie Cashin

This is my winter barnstormer in element cloth with a furry alpaca lining and a big monk's collar — it's rainproof and besides being awfully practical, I feel very chic in it.

XUM

Clay is moulded into a vessel; the utility of the vessel depends on its hollow interior. Thirty spokes make one wheel; the utility of the cart depends on the hollow center in which the axle turns. Doors and windows are cut out in order to make a house; the utility of the house depends on the empty spaces.

Thus, while the existence of things may be good, it is the non-existent in them which makes them serviceable.

EL GRECO

THE World has a First Cause, which may be regarded as the Mother of the World. When one has the Mother, one can know the Child. He who knows the Child and still keeps the Mother, though his body perish, shall run no risk of harm.

It is the Way of Heaven not to strive, and yet it knows how to overcome; not to speak, and yet it knows how to obtain a response; it calls not and things come of themselves; it is slow to move, but excellent in its designs. Heaven's net is vast; though its meshes are wide, it lets nothing slip through.

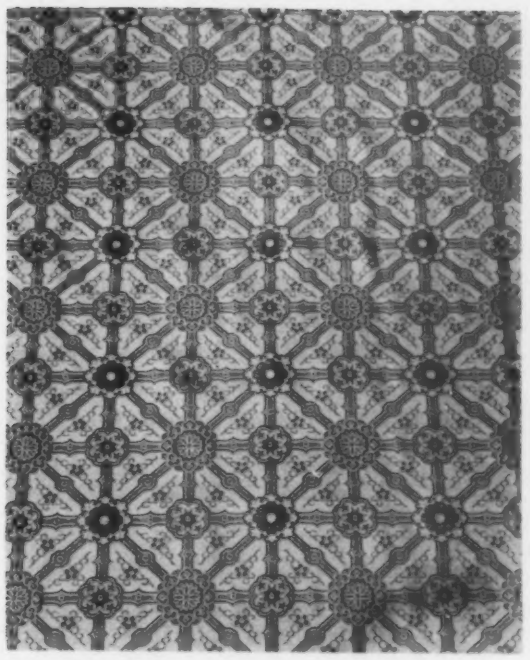
The Way of Heaven is like the drawing of a bow; it brings down what is high and raises what is low.

* * *

Man at his birth is tender and weak; at his death he is rigid and strong. Plants and trees when they come forth are tender and crisp; when dead they are dry and tough. Thus rigidity and strength are the concomitants of death; softness and weakness are the concomitants of life.

It is the Way of Heaven to take from those who have too much, and to give to those who have too little. But the way of man is not so. He takes away from those who have too little, to add to his own superabundance. What man is there that can take of his own superabundance and give it to mankind?

THE FOREGOING EXCERPTS ARE FROM THE SAYINGS OF LAO-TZU, TRANSLATED BY LIONEL GILES.



VIRGIN AND CHILD — MOSAIC FROM HAGIA SOPHIA, ISTANBUL

Courtesy Metropolitan Museum of Art

XUM

ITS name which can be uttered is not an Eternal Name. Without a name it is the Beginning of Heaven and Earth; with a name it is the Mother of all things. Only one who is eternally free from earthly passions can apprehend its spiritual essence; he who is ever clogged by passions can see no more than its outer form. These two things, the spiritual and the material, though we call them by different names, in their origin are one and the same. This sameness is a mystery — the mystery of mysteries. It is the gate of all spirituality.

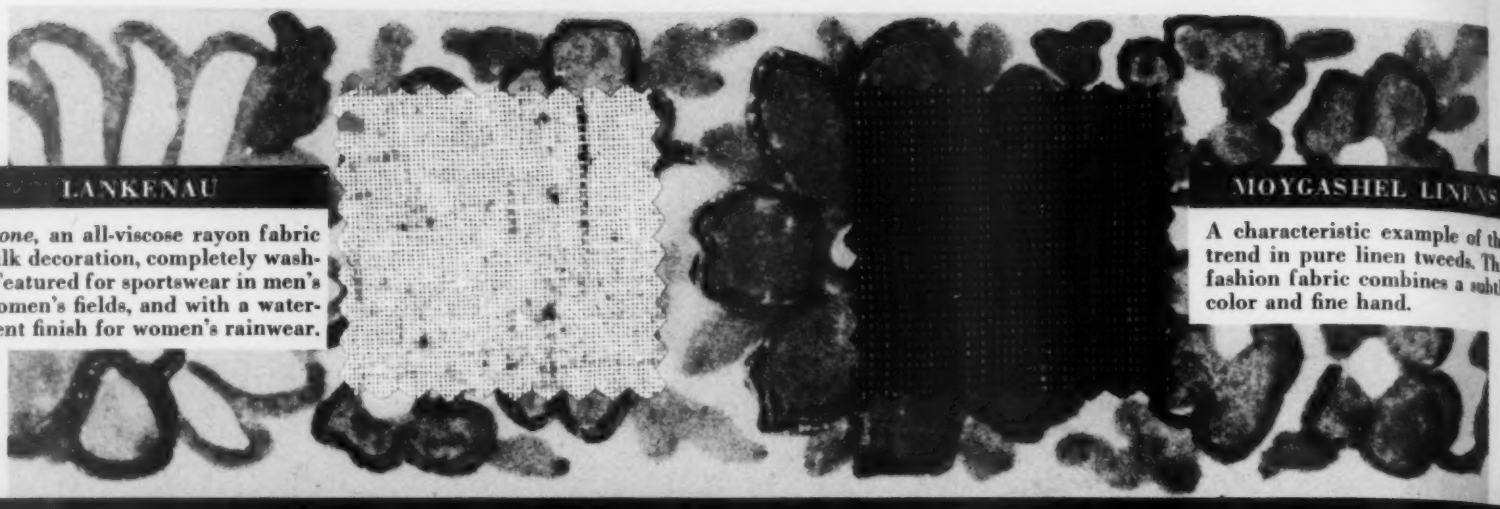
It eludes the sense of sight and is therefore called colorless. It eludes the sense of hearing and is therefore called soundless. It eludes the sense of touch and is therefore called incorporeal. These three qualities cannot be apprehended, and hence they may be blended into unity.

Its upper part is not bright, and its lower part is not obscure. Ceaseless in action, it cannot be named, but returns again to nothingness. We may call it the form of the formless, the image of the imageless, the fleeting and the indeterminable. Would you go before it, you cannot see its face; would you go behind it, you cannot see its back.

The mightiest manifestations of active force flow solely from it.

In itself it is vague, impalpable — how impalpable, how vague! Yet within it there is a Form! How vague, how impalpable! Yet within it there is a Substance. How profound, how obscure! Yet within it there is a Vital Principle. This Principle is the quintessence of reality, and out of it comes Truth.

From of old until now, its name has never passed away. It watches over the beginning of all things. How do I know about this beginning of things?



LANKENAU

Multitone, an all-viscose rayon fabric with silk decoration, completely washable. Featured for sportswear in men's and women's fields, and with a water-repellent finish for women's rainwear.

MOYGASHEL LINENS

A characteristic example of the ... trend in pure linen tweeds. This ... fashion fabric combines a subtlety ... color and fine hand.

Some new fabrics which indicate interesting trends

MOORESVILLE MILLS

Raycara, a luxury blend fabric, combining combed cotton for a crisp, fresh hand, Vicara for softness, and rayon for clarity of color.

J. ROSENHOLZ, INC.

An example of the popular bou... trend is this all-viscose rayon tropi... Perfect for sport and spectator w...

FINIGER MILLS

A 100% pure luxury-loomed cashmere which finds great acceptance in both men's and women's fields. Sensibly priced, this traditionally elegant fabric is now available for wider use.

TEXTILE LOOMS

This charming dobby-effect San... ized chambray with clipped dot... eminently suited for children's w... sports and spectator wear.

ALAMAC KNITTING MILLS

Thalspun herringbone of 100% Orlon jersey. First of its kind, this yarn-dyed novelty fabric is washable, resists shrinkage and allows for permanent pleating. Now dyed and woven in heretofore unobtainable dark colors.

R. L. DREIFUSS, INC.

A combination of nylon and Orlon ... sults in a fabric with crisp, silk-... texture. Obtainable in taffeta-type ... ish or puckered effect. Washable, ... drying; requires little or no iron...

Museum, Fabric House, Manufacturer and Magazine Join Hands For a Unique Presentation

Sound, creative merchandising ideas are often a combination of inspiration, insight and a feeling for what the publishing field calls *news value.* Yet even this is not quite enough; the ideas must be packaged and promoted. They must be developed on a fabric-design level, integrated into product or garment creation projects and, finally, tied in with live promotions. An illustration of a successful operation on all of these creative levels is the promotion of *Children's Fashions from Other Lands,* an idea conceived and developed by Edna S. Brodie of J. P. Stevens and Co.

* * *

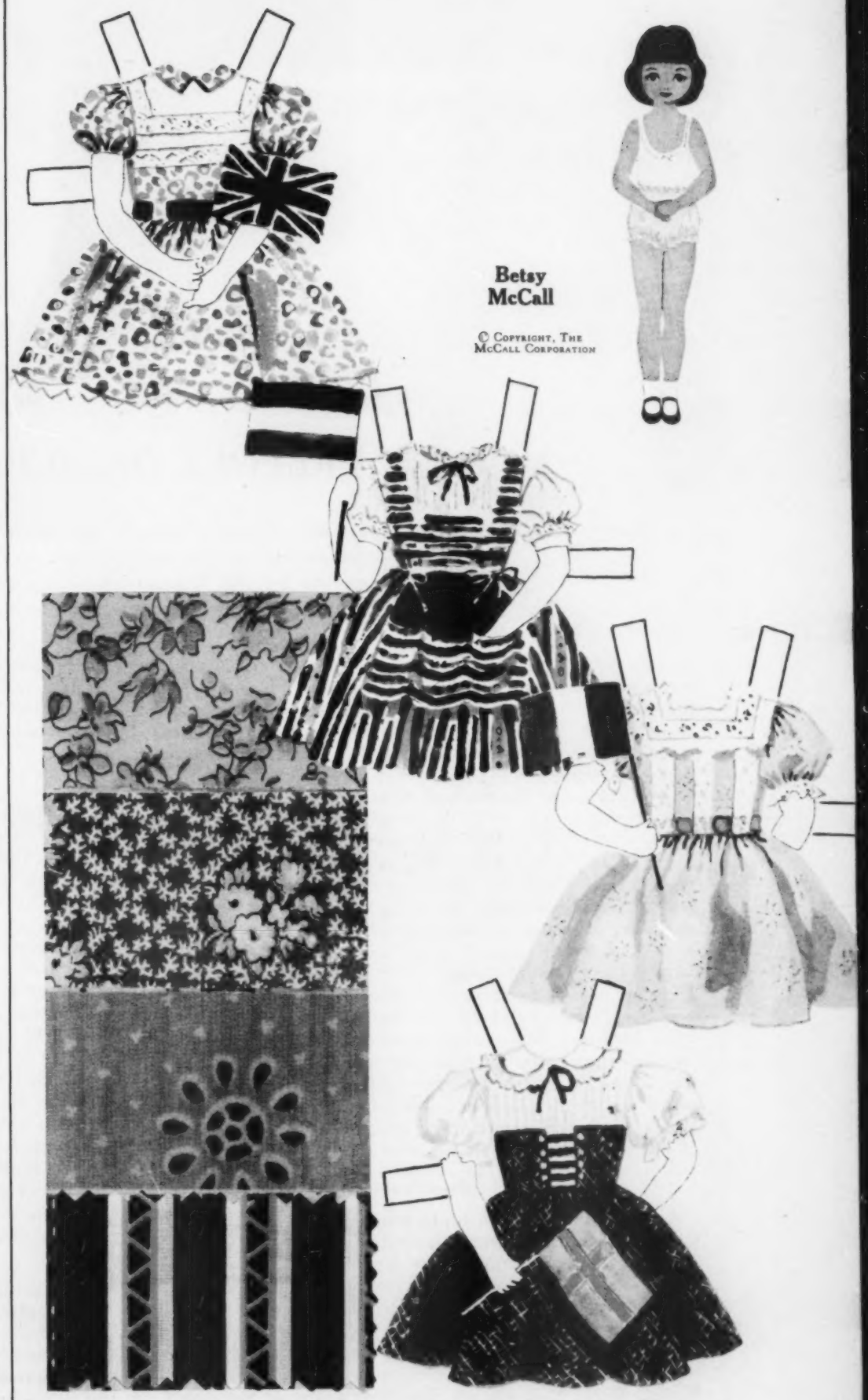
Miss Brodie developed her initial idea while browsing in the New York museums. She was struck by the colorfulness of children's clothes in countries rich in traditions of peasant design, and felt that this field was a source of many attractive and marketable designs for fabrics and garments for the American trade. The idea struck her as particularly timely because of our current interest in the activities of the United Nations and the many efforts now being made to help children of other countries.

But more than this were the merchandising and promotion angles. Clothes designed on these themes would stimulate the imagination and interest of children and create a special demand. Further, the idea would lend itself to publicity and advertising. It would be something the retail stores could capitalize on with a minimum of effort and promotional cost. It was adaptable to fashion shows. It made good talking material. And the gay and colorful garments would be effective in advertising and displays.

* * *

Miss Brodie discussed the idea with fashion editors of newspapers and magazines and found an encouraging editorial response. The next step was development and merchandising. She outlined the project, listing the values and possibilities of the idea as she saw them, and presented the formal plan to Borgenicht Brothers. The outline aroused keen interest. Borgenicht Brothers agreed to prepare a line of children's clothes around the material Miss Brodie had available. McCall's magazine, which was among those with whom Miss Brodie had discussed the idea, agreed to feature *Betsy McCall,* in the November 1952 issue, in four of the dresses from the Borgenicht line.

The final stage of the project was the selection of the actual designs to be put into production. Miss Brodie worked closely with Miss Wiseman of the Costume Institute of the Metropolitan Museum of Art, and made a selection of costumes with designs suitable for children's fashions of today. From these the Borgenicht Brothers designers made sketches and notes for the styling of the garments to be manufactured.



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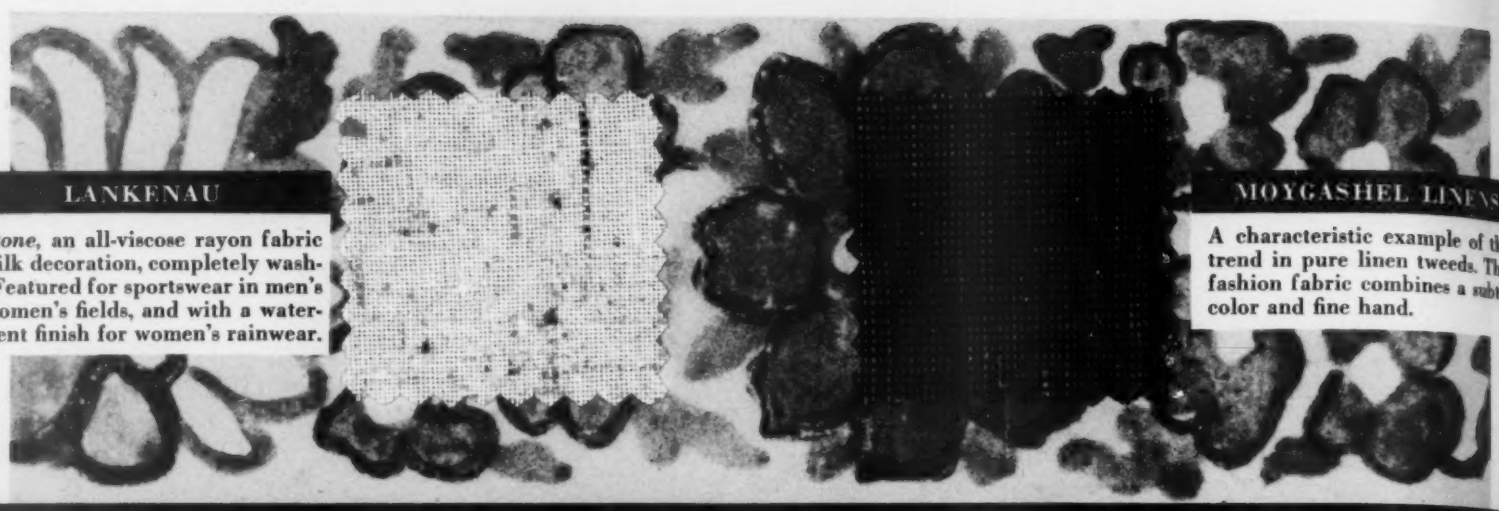

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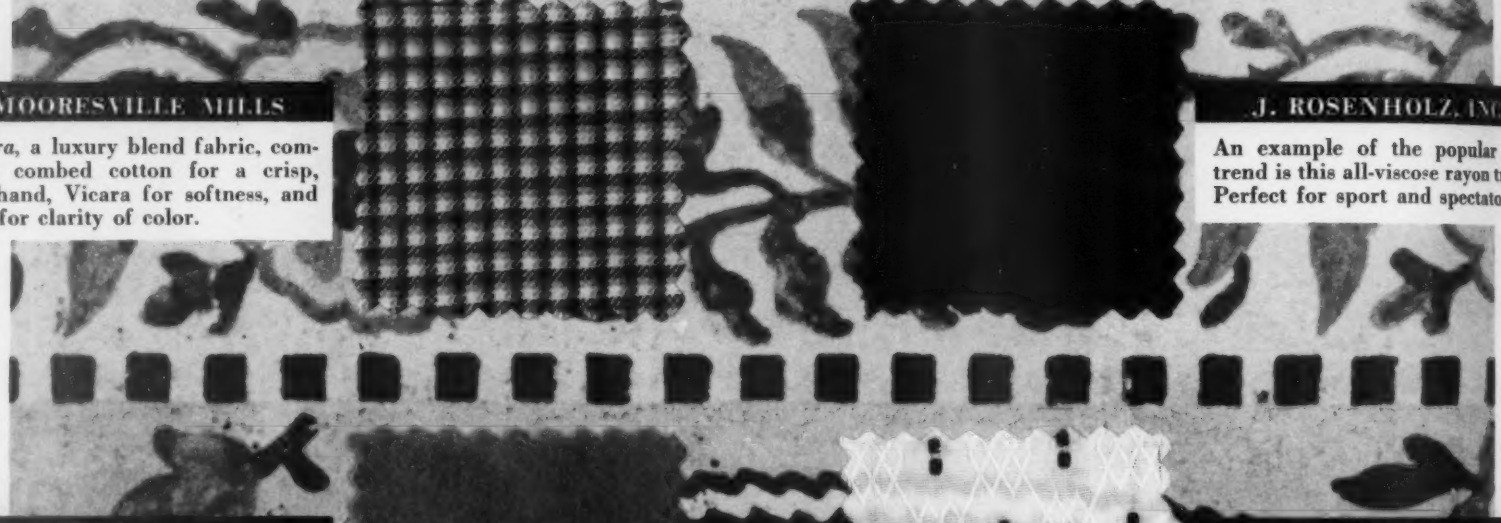

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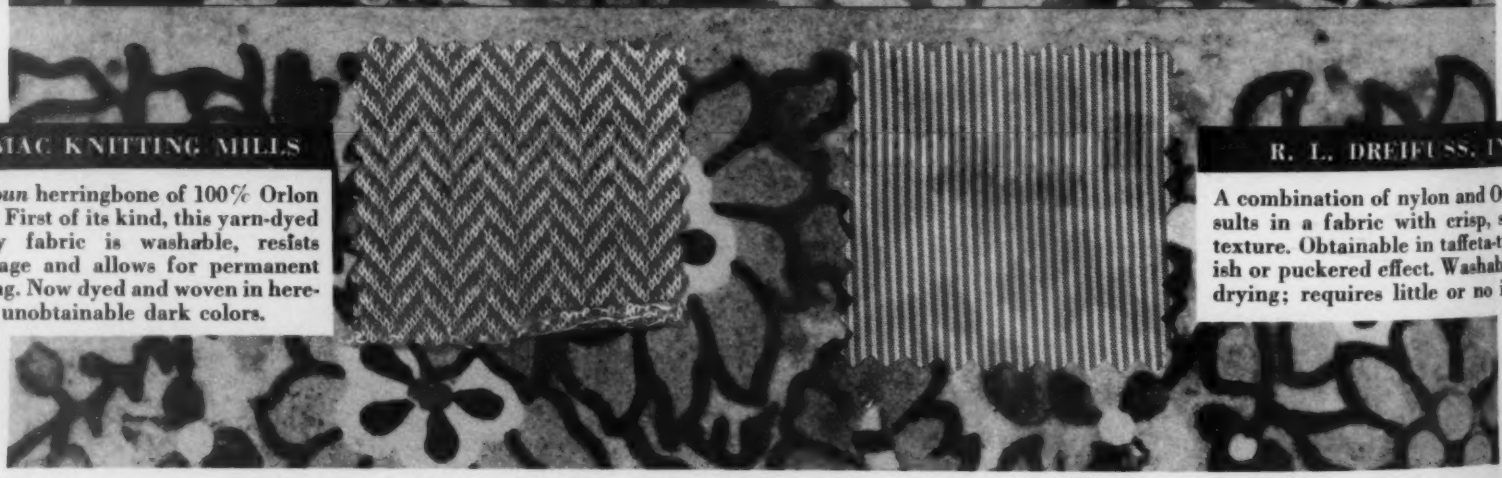

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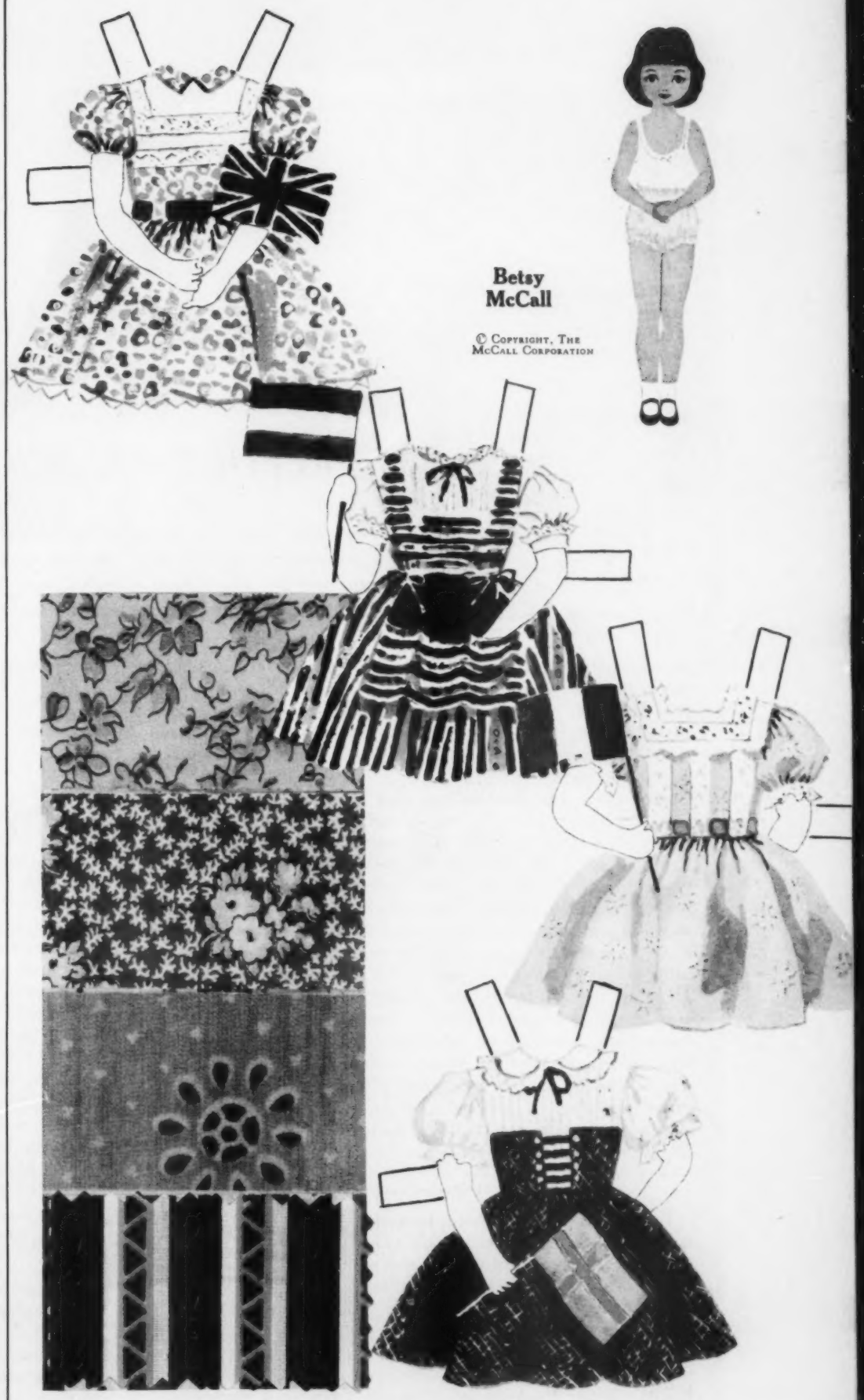

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REPORT ON ACRILAN

***AMERICAN FABRICS** reports on another of the great developments in the field of man-made fibers, newly launched by the Chemstrand Corporation, Decatur, Alabama, after years of experimentation and research.*

IN VIEW OF THE CONFUSION and loss which premature announcements in the trade and too early offerings of fabrics made from new fibers can cause, it was only after twelve years of research carried out at a cost of several million dollars that the Chemstrand Corporation has decided to release Acrilan for commercial adaptations.

Today you can for the first time enter the retail stores to buy wearing apparel, piece goods and blankets made wholly or partly of Acrilan, which is the newest acrylic fiber to be introduced in the textile industry. The newcomer has much in common with its hydrophobic cousins—already established—Nylon, Orlon, Dacron and Dynel; it is washable and fast-drying, resists wrinkles and retains heat-set pleats and creases; it is bulky and gives good warmth without undue weight; its dimensional stability is good; it is durable and also it resists moths and mildew. These are the leading attributes claimed for it by its originators.

A recently unveiled showing in New York included Acrilan in items from some fifty manufacturers and covering seventy-five styles in merchandise for men, women and children, and showings across the country have been arranged in the department stores. These show fabrics made of all-Acrilan and blends such as 80% Acrilan with 20% wool; 50-50% Acrilan-cotton; 50-50% Acrilan-rayon.

The Basic Problem

It is only since 1935 that information on the use of acrylonitrile copolymers has been available from the results of research, although basic possibilities have long been known. The real problem was to find a suitable solvent that could dissolve the refractory polymers and make a satisfactory spinning solution. The Chemstrand Corporation was formed in March, 1949 to do research and development work on synthetic fibers and they rapidly and successfully solved this problem. In laboratories at Marcus Hook, Pennsylvania, Dayton, Ohio, and Springfield, Massachusetts, Acrilan was developed and it was finally placed in pilot production at Marcus Hook in November, 1950. The output was submitted to several different textile laboratories for a first series of evaluations. Repeated modifications were the result, and these led to development of the fabrics now being introduced to the consuming public.

Thermoplastic Properties

Acrilan being a thermoplastic type fiber, fabrics made from it have the property of strongly retaining heat-set pleats and creases. Due to its low moisture absorption factor, wetting does not much affect either the stability or result in distortion of preset creases or pleats. The fiber has a good resilience which gives a softly springy and almost luxurious hand and enables it to shed wrinkles satisfactorily. The low specific gravity (lowest of any fiber) spells minimum weight for a given bulk, or maximum bulk for a given weight. Nevertheless, as with wool, this does not prevent the weaving of open-construction light-weight fabrics which are cool for summer wear. And of course, like other acrylic fibers, it is relatively durable and hard wearing.

In the case of blends Acrilan can be classed among the upgrading fibers — that is to say, the percentage content and type of fiber with which it is blended generally determines the degree to which Acrilan properties can be claimed for the garment or goods. Incidentally, this has led to the adoption of manufacturers' hang-tags identifying the fiber content, to ensure proper handling and care of garments with recommendations for cleaning procedure.

A Development Program

The Acrilan development program stems from Chemstrand's current plans. These include a building program for completion in 1954 when the company will have 4,000 employees and assets in excess of $150 million, in addition to research, construction and engineering staffs. It is thus prepared to back the appearance of Acrilan with commercial output from facilities at Decatur, Alabama, as well as with continued active research and development on an ample scale

PROPERTIES OF ACRILAN

The following specific properties are ascribed to Acrilan as a result of tests and pilot plant experimentations con ducted at Marcus Hook. Additional information is available from the Chemstrand Corporation.

Size

3 denier, 5 denier, 1.5 inches to 5 inches.

Color

Light, cream color in bulk.

Luster

Semi-Dull.

Hand

Soft, warm, very bulky.

Crimp

Moderate. Satisfactory fiber cohesion.

Specific Gravity

1.135. The lowest of all textile fibers.

Tensile Properties

Single Filament (average for 3 denier filaments)
3.5 grams per denier
17.5% extensibility
Spun Yarn (cotton system)
Lea Skein Product for 30/1 cc. 1600-1800
Single End Product 330-380
10-12% extensibility
Wet Strengths at Least 90% of Dry Strengths

Elastic Recovery

80% at 2% extension
50% at 5% extension
40% at 10% extension

Average Stiffness

This property as given by the slope of the elastic portion of the stress-strain curve is

30 grams per denier

Average Toughness

This property as given by the total area under the stress-strain curve is

$$\frac{0.32 \text{ gram cm}}{\text{denier cm}}$$

Cross-Section

Generally elliptical, axes 2:1.

Mildew Resistance — Moth Resistance

Excellent.

Thermal Insulation

Tests of heat loss through woven and knitted fabrics of various constructions show that Acrilan is about the same as wool in thermal insulating property.

Temperature Effects

Fiber Shrinkage in Boiling Water 0-2%
Fiber Shrinkage in Air:

Temperature	*% Shrinkage*
180°C. (356°F.)	5
200°C. (392°F.)	6.5
220°C. (428°F.)	8.5
240°C. (464°F.)	11.5 (softens)
260°C. (500°F.)	16.0 "

Turns yellow to orange to brown on prolonged heating at elevated temperatures.

Solvent Resistance

Tests with the following solvents show no apparent action on Acrilan yarns at room temperatures.

Acetone	Ethanol
Ethyl Acetate	Methanol
Dioxane	Tetrahydrofuran
Methyl Formate	Nitromethane
Formaldehyde	Carbon Tetrachloride
Benzene	Freon 113
Petroleum Ether	Furfuryl Alcohol

Inflammability

Acrilan fabrics do not readily ignite. Cigarette or other glowing members do not ignite them. It is even difficult to ignite some Acrilan fabrics with a lighted match. However, when subjected to a sufficiently hot flame they burn with a smoky flame and fuse into a burning tar.

Suggested Applications

Due to the warm hand and bulky character of the fiber, it is expected that Acrilan will find its widest application in apparel, outerwear fabrics, blankets and inner linings, in 100% and in blends with wool and rayon. Its good outdoor and chemical resistance suggest use in tents, awnings, chemical resistant clothing, filter cloth and fume bags.

Cotton System

Little change is necessary from the techniques used normally in processing rayon staple. At least for the present, a more frequent card stripping cycle is necessary in order to produce high quality sliver.

Woolen System

The standard practices in carding and spinning used for rayon staple may be applied to Acrilan staple. No additional finishes should be added unless fiber is stock dyed. In such a case, the recommendations of the Textile Research Department should be obtained.

Worsted System

The processing of Acrilan staple on the Worsted System presents few problems to those familiar with processing other synthetic fibers. In general, setting and drafts are comparable to those used for rayon. No additional finishes should be added unless fiber is stock dyed. In such a case, the recommendations of the Textile Research Department should be obtained.

Dyeing

Acrilan is readily dyed in conventional equipment by minor variations of normal procedures.

The dyeing is today normally done with the same dyes as used on wool. The application techniques are also similar although some strong mineral acid appears to be necessary for even the neutral acid dyes when applied to Acrilan.

The light fastness and wash fastness vary with the individual dyes but, in general, approach, in light to medium shades, the light fastness of wool while the wash fastness is better than wool. In dark shades, the wash fastness is not today as good as shown by wool. Proper dye selection is necessary for optimum results. Perspiration fastness and wet crock fastness present problems in dark shades.

Acetate dyes can be applied to Acrilan readily at 195°F. or above. However, their light fastness is seldom as good as the same dyes on cellulous acetate. The wash fastness is also only fair.

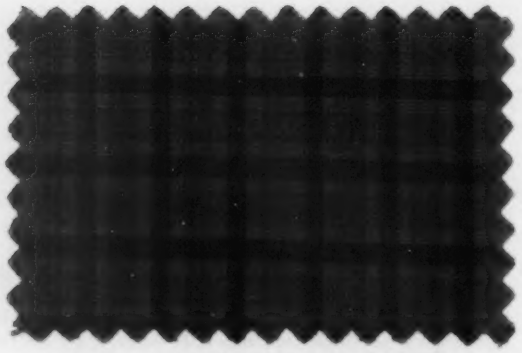
Preliminary work on vat dyes has indicated some promise, but further investigation is necessary before they can be recommended for commercial use on Acrilan.

It is suggested that, initially, samples of desired colors and fastness specifications be submitted so that formulas and technique may be suggested.

Finishing

The finishing of Acrilan is usually designed to bring out the inherent bulk and silkiness of the fiber. Hot pressing operations should, therefore, be avoided with a 30 second semi-decating as the most drastic steaming to be used. Dry heat temperatures in excess of 300°F. for more than a few minutes should also be avoided because of yellowing of fiber at high temperatures.

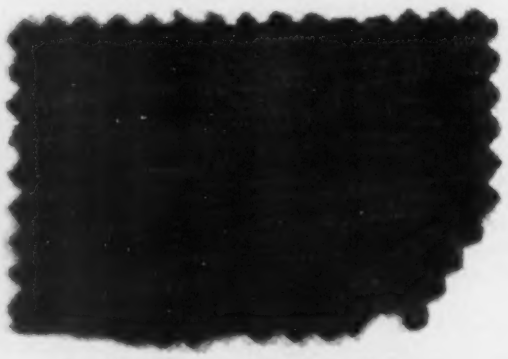
For swatches of the new Acrilan fabrics please turn the page . . .



Spinet, a yarn-dyed fancy of Acrilan and viscose rayon which is washable and spot-resistant. A lightweight, porous fabric, warm and soft of hand, Acrilan adds pleating permanence.

A [illegible] fabric of Acrilan, warm and long-wearing, moth-proof and resilient, and resistant to adverse weather conditions.

BORG FABRICS



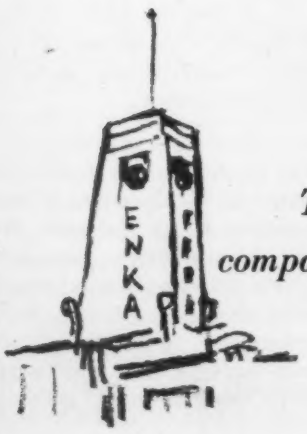
Acrella, a jersey of 80% Acrilan and 20% worsted. Its permanent pleats will withstand home washing machines and require minimum ironing.

PRINCETON KNITTING MILLS

HIGHLIGHTS IN THE SPEEDY BUILDING OF ACRILAN PRODUCTION

The following important dates highlight formation of the Chemstrand Corporation and development of its Acrilan production facilities:

May 16, 1949	— The Chemstrand Corporation Inc., chartered at Wilmington, Delaware, to carry on research and development of synthetic fibers.
March 20, 1950	— Arrangements made with J. P. Morgan and 11 financial institutions for placement of bonds in the amount of $110,000,000.
October 7, 1950	— 700-acre tract three miles west of Decatur, Alabama, on the Tennessee River, selected as site for Acrilan plant facilities, research center and company administrative headquarters. Property purchased.
November 6, 1950	— Chemstrand pilot plant start-up of Acrilan production at Marcus Hook, Pennsylvania.
February 26, 1951	— Construction of Chemstrand's Acrilan plant begun at Decatur, Alabama.
July 25, 1951	— Acrilan registered as trademark for Chemstrand's acrylic textile fiber.
October 17, 1951	— Sales headquarters established at 350 Fifth Avenue, New York 1, New York.
August 27, 1952	— Fabrics and garments of Acrilan introduced to the press at New York City.
September 8, 1952	— Acrilan merchandise consumer début in prestige stores throughout the country with opening of consumer advertising campaign.



The ENKA Story

The transplanting of an offshoot from a European company, which has become a vital and flourishing factor in the American textile world.

What was once sleepy Hominy Valley near Asheville soon became a large and vigorous rayon center

THE STORY OF ENKA RAYON

Early in 1928 a group of Dutchmen experienced in viscose rayon production came to America with ideas and capital. They were led by Dr. J. C. Hartogs and F. H. Fentener van Vlissingen, both of them experts in the European techniques of rayon manufacture, as practised by the Nederlandsche Kunstsijdefabriek, N. V. who had developed the manufacture of artificial silk in their mills at Arnhem, near the German border. Bringing special knowledge of the chemistry of cellulose regeneration to the American scene, they organized a new American company in May 1928.

The name of the American company was derived from the initial letters of the parent Dutch company, N & K. Pronounced in Dutch as *En* and *Ka* these initials were formed phonetically into *ENKA*. The new company was headed by a board of American directors and it was the role of the parent company to cooperate with the American company through a procedure of technical assistance.

These industrial pioneers, after investigating some fifty sites, decided to build their first production plant near Asheville, N. C. Factors which prompted this decision were accessibility to raw materials and markets, an ideal climate and abundance of pure water, and a readily available labor force. What was once sleepy Hominy Valley near Asheville, soon became a large and vigorous rayon center.

Thus the first American production unit was built and finished in 1929 at Enka, N. C., near Asheville, and it reached full production during August, 1930, with a capacity of about 6,500,000 pounds of viscose process rayon yarn.

Initial Difficulties

The young company overcame its initial difficulties and weathered the depression of the thirties. It actually grew in the midst of the depression, at a time when 11 banks had closed in western North Carolina and when business and industry throughout the nation were paralyzed. During the years following the depression and those preceding World War II, when Enka's work week was shortened and its wages increased, the expansion continued.

In 1940, eleven years after its birth, Enka steadily employed nearly 3000 people with an annual payroll of 4½ million dollars. Annual production stood at 23 million pounds, or four times the first year's output.

* * *

During World War II, rayon was vitally needed for the manufacture of tire cord for airplane and military equipment tires; also, for self-sealing tanks and hose, for flare, fragmentation bomb and cargo delivery parachutes, for navy flotation suits, linings for pilot precision gloves, blood plasma filters, and many other war-service items. At the request of the United States Government, an additional unit for the production of high tensile strength yarn was rushed to completion. In February, 1948, the first unit of a new plant at Low-

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land, Tennessee, was put into operation.

Expansion has steadily continued at the Company's plants, to an anticipated annual capacity, of more than 100 million pounds by the end of 1952.

THE ENKA OPERATION

How the natural sources of cellulose are transformed into gleaming, lustrous or dull yarns for the nation's textile mills.

Rayon yarn, which consists of regenerated refined cellulose, is derived from bleached spruce, pine and hemlock wood pulp or from cotton linters. This process consists, in brief, in refining cellulose from these natural sources, dissolving it to form a spinning solution, and extruding it, in filament form, in the spinning operation. The resulting filaments of pure regenerated cellulose form the basis for subsequent yarn manufacture. The pure regenerated cellulose comes to the plant from the pulp manufacturer in rectangular white sheets resembling large desk blotters. The sheets of cellulose are then weighed, assembled in batches and soaked in a caustic soda solution in the soaking press for about two hours, after which the lye is drained off. The pulp is then squeezed out by means of a hydraulic ram to remove superfluous lye, until the wet weight is approximately three times the original dry weight, which process also removes some of the inherent impurities in the pulp. In this state the pulp, now called alkali cellulose, is dropped through a chute to a shredder on the floor below.

Shredding the Alkali Cellulose

The shredding machines or pfleiderers contain revolving blades which tear the sheets and loosen the cellulose fibers to

a mass of small, fluffy particles called *white crumbs*. These are placed in a large temperature-controlled room for about two days where they are left to age. In this process their molecular structure undergoes a change. The temperature of the room and the time of aging are carefully regulated to insure a uniform product.

When the white crumbs have aged to the proper degree, they are placed in a churn with liquid carbon disulfide. Here again the temperature is carefully controlled. The white crumbs are thus changed to orange crumbs, and in this stage

(*please turn*)

the cellulose is soluble in dilute caustic soda solution.

Dissolving the Orange Crumbs

After the crumbs have been sulfidized they are dropped through a chute into dissolving tanks in a room directly below the churn room. The tanks are filled with a measured quantity of dilute caustic soda, and in this solution the orange crumbs are gradually dissolved with the help of stirring and pumping action. The resultant solution, known as the viscose solution, is a golden brown, sticky, viscous liquid with the consistency of honey or lubricating oil.

Viscose at this point is apt to contain some undissolved particles of cellulose and foreign matter which must be carefully removed before spinning lest they later cause imperfect yarn. In addition, the properties of viscose must be improved for spinning purposes by about two days' aging. Both objectives are accomplished simultaneously.

Filtering the Solution

From the dissolving tank in which the orange crumbs were processed, the viscose is pumped to retaining tanks and then by air pressure forced into other tanks through filter presses fitted with cotton wadding and cotton cloth. From these latter tanks it is again forced in the same manner into still other tanks, from which it is then forced to the spinning machines at the proper time.

In the course of the filtering process, a vacuum is applied to each tank in order to remove air bubbles from the viscose, since bubbles could cause breaks in the thread in the subsequent spinning process.

Aging of the viscose, at carefully controlled temperatures, takes place during the same period as the filtering and removal of bubbles, as described above.

At the end of the complete processing tests are made to determine whether the viscose is *ripe*, that is, ready for spinning.

Spinning into Rayon Filament

The viscose is first pumped into a glass tube and out the other end through a thimble-like metal cup called a spinneret. This spinneret is perforated with anywhere from 18 to 720 microscopically small holes, from 2 to 3 one-thousandths of an inch in diameter. The spinneret is immersed in a spinning bath of dilute sulphuric acid and various salts. When the viscose solution is pumped through the spinneret into the spinning bath it coagulates, because the chemicals in the bath remove from the cellulose the caustic soda and carbon disulfide which heretofore rendered it soluble. Thus the cellulose, now regenerated, is again in a solid state in the form of fine filaments. Each hole in the spinneret forms one filament and altogether these form the continuous filament yarn which comes from the spinning bath.

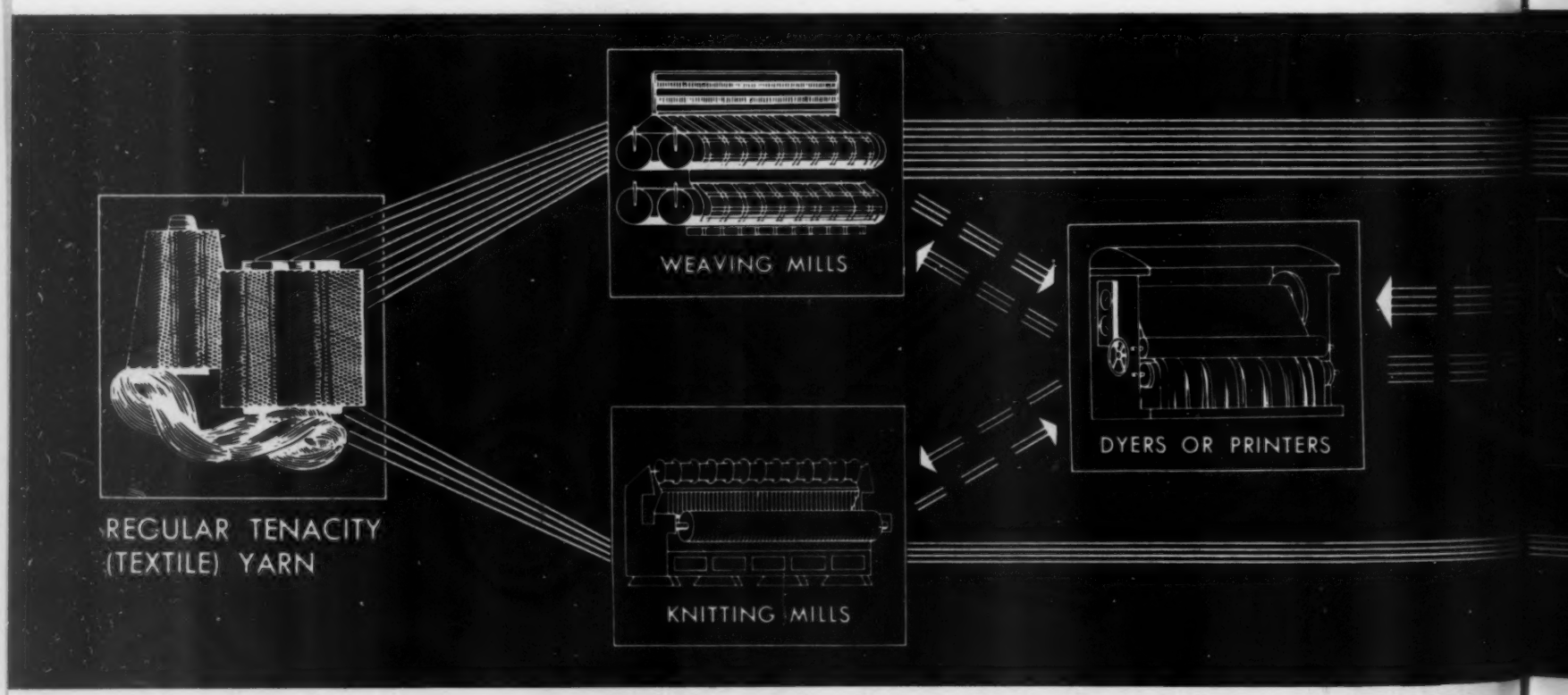
Spinning the Yarn

Spool or Bobbin Spinning Method. In this operation the coagulated viscose is picked up by an operator, drawn up over guides and rollers, and placed on a revolving spool for winding and assembling as a thread. The speed of take-up on the spool is carefully controlled through an intricate system of gears and cams to get thread of even thickness. The thread, of course, contains as many filaments as there are holes in the spinneret.

Pot Spinning Method. In pot spinning the process of thread formation is the same as that in spool spinning. However, the thread, instead of being wound onto a spool, is led through a funnel moving up and down into a revolving pot or bucket where, through centrifugal force, it gathers against the wall of the pot and builds up into a hollow cylindrically shaped package called a *cake*. Due to the rotation of the pot, the yarn is evenly twisted when it reaches the wall of the pot.

Washing and Drying

When the yarn comes from the spinning machines it must be thoroughly washed with soft, filtered water and certain chemicals to remove the sulphuric acid and other impurities remaining in the yarn from the spinning process. The pot-spun yarn is washed by pumping the washing solution up



How Enka yarns proceed through the weaving

through the hollow cylinder-like cake and forcing it through the yarn to the outside of the cake. The solution drains down the outside of the cake and back into one of the reservoir tanks for further use.

Most of the pot-spun yarn is dried in vacuum driers, a method which improves the quality of the yarn by producing uniform shrinkage, making the yarn suitable for weaving purposes. This is a unique development in the drying of rayon yarn in the United States.

* * *

This completes the processing of the yarn. The remainder of the operations take place in the Textile Department where mechanical processes prevail.

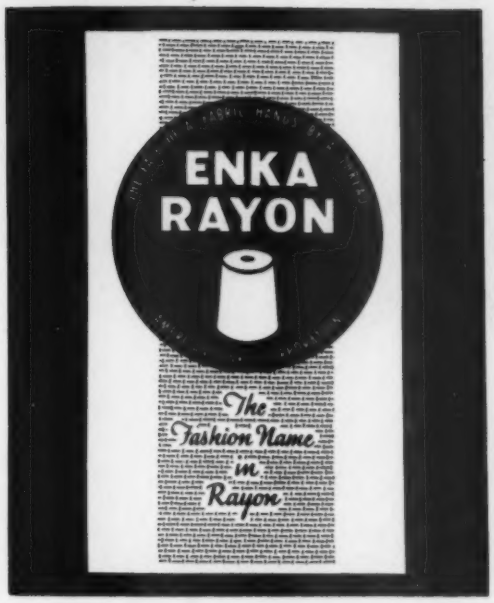
Twisting

The pot-spun yarn receives its twist at the time it is spun. Spool-spun yarn, however, is wound on the spool in parallel strands of many filaments without twisting. In this condition the yarn would be too frail and loose for further handling and processing on weaving and knitting machines. The varn has to be twisted — somewhat as twine or cord is twisted — to protect the filaments so that it can be handled more easily. The spinning spools are therefore placed on vertical spindles on the twisting machine. The yarn is pulled off over the top end of the spool, which rotates at approximately 6,000 revolutions per minute, and is wound onto a rotating horizontal bobbin. The relation of the number of revolutions of the unwinding spool to the take-up speed of the winding bobbin produces the desired twist.

Reeling

A comparatively small part of the spool-spun yarn, after being twisted, is converted to skeins and sold as such, and therefore must be wound from the twisting spools onto reels to form the skeins. The skeins are then washed or bleached.

After the washing and bleaching operations the wet skeins are placed in large drying chambers. They are then inspected,



sorted into quality grades, boxed, and packed in cardboard containers for shipment to customers.

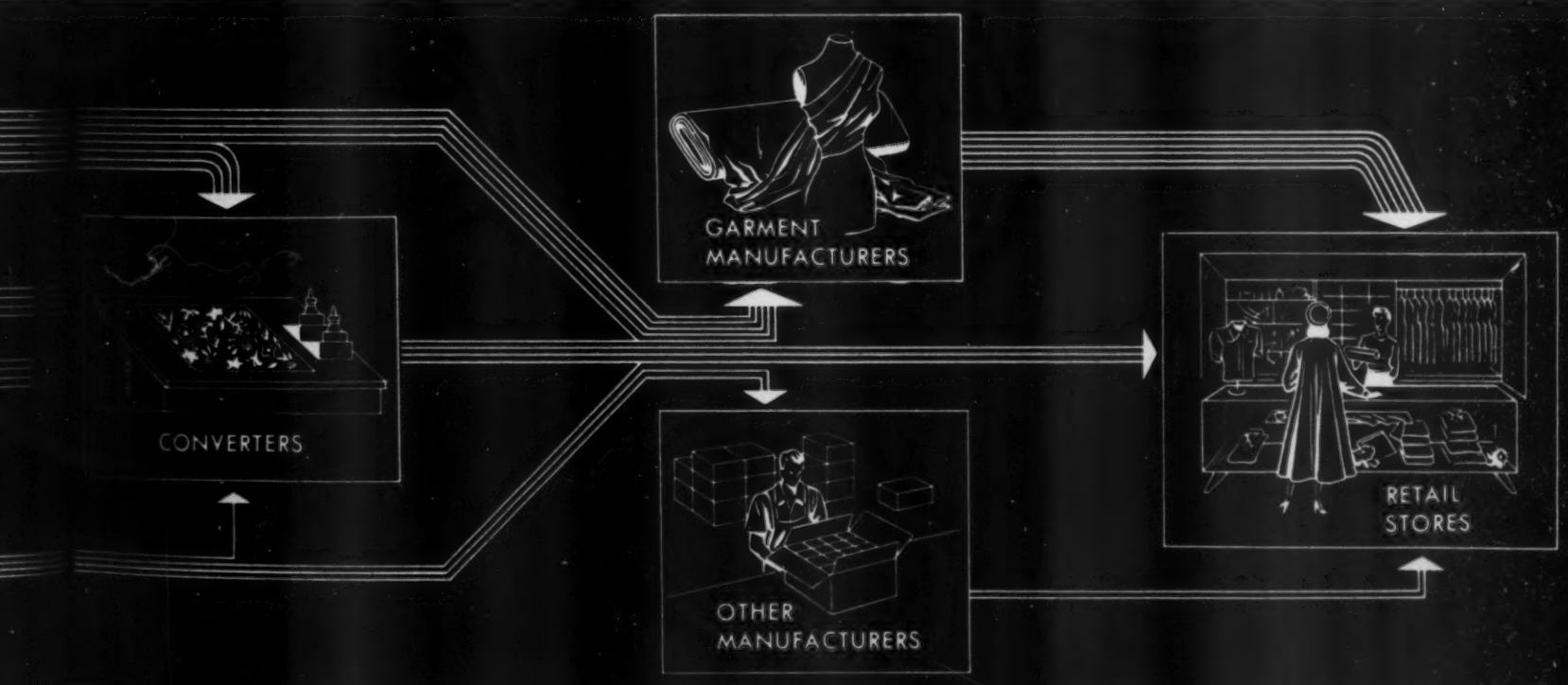
Cone Winding

The major part of the yarn from the twisting spools, as well as almost all of the cake yarn, goes to the Coning Department, where it is wound onto cones, which are particularly adapted to high speed unwinding in customers' plants. In the coning operation, the individual spools or cakes of yarn are tied together as they are wound onto cones so that each complete cone consists of one continuous strand of yarn. Tire yarn, however, is wound onto straight tubes which are more suitable for slashing.

High Tenacity Yarns

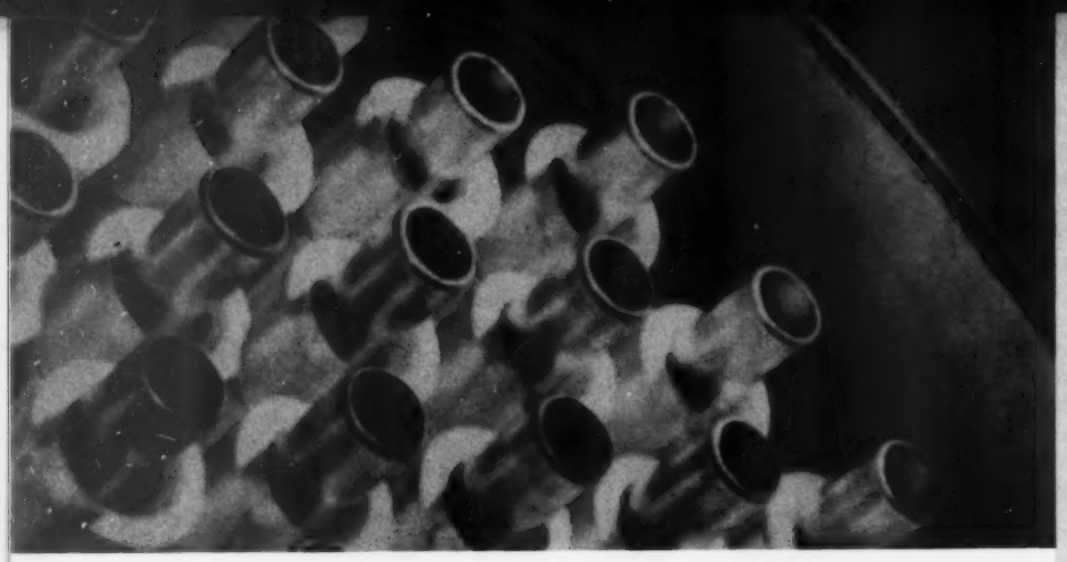
Enka high tenacity yarn is made by the same viscose process as the yarn used for textile purposes; it is heavier, however,

(please turn the page)



and knitting mills to the consumer.

XUM



less elastic, and of greater strength. The high tenacity yarn used by tire manufacturers is shipped on eleven- to twelve-hundred-pound beams to fabricating plants where the yarn is twisted to form heavy cord and is then woven into tough, resistant fabric. The larger tire manufacturers maintain their own fabricating plants; smaller manufacturers utilize cording and weaving services of independent fabricators.

MERCHANDISING ENKA YARNS AND FABRICS

The bulk of Enka textile yarn is sold directly to the weaving and knitting mills. These customers are of two kinds: the integrated mills, selling finished fabrics or products, and the grey goods mills, marketing fabrics in an unfinished state. Converters purchase the output of the grey goods mills, contract to have these fabrics dyed, printed, or otherwise finished; then merchandise the final products to garment manufacturers, industrial fabric users, and retail stores.

In today's developing world of man-made fibers, the original name of Enka rayon, *artificial silk*, has long passed into disuse. With the advent of new bases in fibers, from proteins in corn to constituents in natural gas, the special qualities of every fiber have come to be fully analyzed, appraised and utilized. There has resulted a new science of textile engineering, in which the blending and combining of fibers, their special handling and special finishing, has opened up a new technological world. In these combinations the fine qualities of rayon, both in its regular and in its high tenacity forms, have been developed and advanced. They have measured up in stature to hold a leading position in the textile world today. And, in the world of fashion, Enka rayons have exhibited their special qualities which have won them a high place.

The Foundation of En on a superb Tec

1. CELLULOSE SHEETS arrive and are sampled and weighed. After steeping in caustic soda the sheets are pressed and shredded.

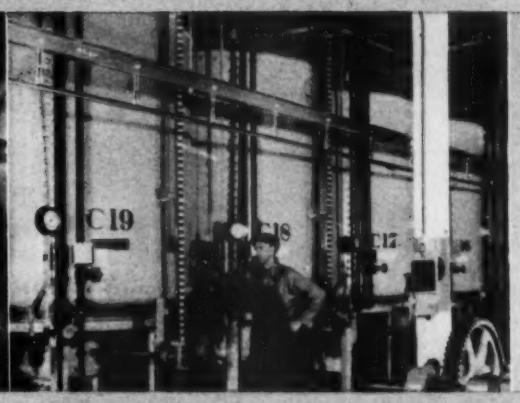
5. SPINNING. The filaments formed harden in the bath and are withdrawn over rollers in the form of continuous filament yarn.

9. CONING. Most spool spun and much pot-spun yarn is wound onto cones — conical packages for high-speed unwinding.

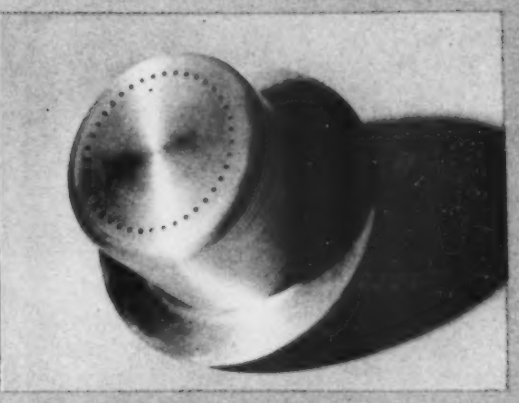
XUM

Enka's Fashion Achievement is based Technical and Manufacturing Organization

2. XANTHATE CRUMB. The alkali cellulose is treated with carbon disulphide to form orange (xanthate) crumbs which are soluble.



3. DISSOLVING. The crumbs are dropped into dissolving tanks filled with caustic soda, and the solution aged in storage.



4. SPINNERETTE. The liquid, after aging, is forced through tiny holes in the surface of a fine metal cap, into a chemical bath.

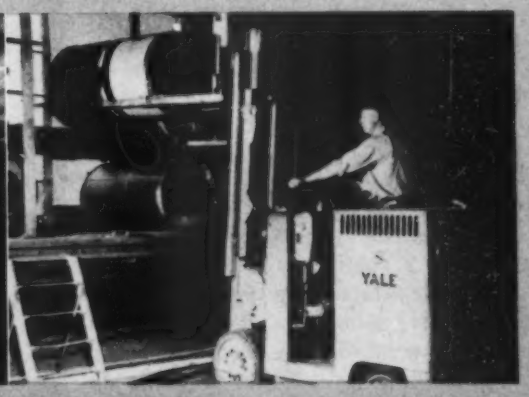
6. POT SPINNING. In pot spinning the yarn winds into revolving pots forming cakes, in spool spinning it is wound on spools.

7. EXTRACTING. Once spun the yarn is thoroughly washed and cleansed and the residual water extracted.

8. TWISTING. Pot-spun yarn receives its twist when spun. Spool-spun yarn is twisted later to compact the threads.

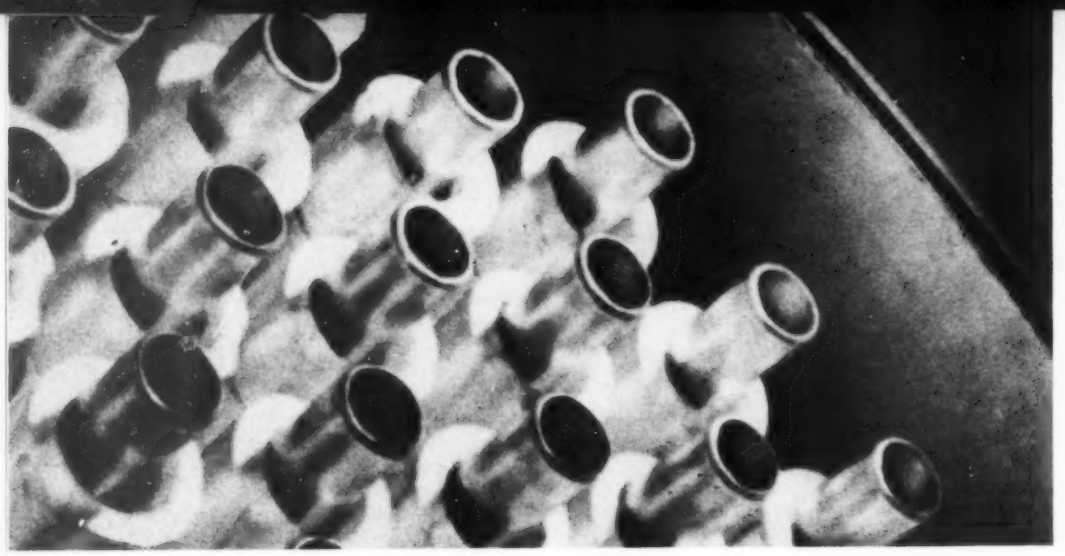
10. SKEINING. Yarns for dyeing are often wound on skeins to facilitate penetration of the dye evenly through the yarn.

11. BEAMING. Yarn packages are placed in creels from which warp beams are wound, ready for further processing.



12. SHIPPING. The picture shows beams, now wrapped for transit, being loaded for rail shipment to customer's plant.

For Enka Rayon at the Fashion Level Please Turn the Page



The Foundation of En
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***Enka** . . . continued*

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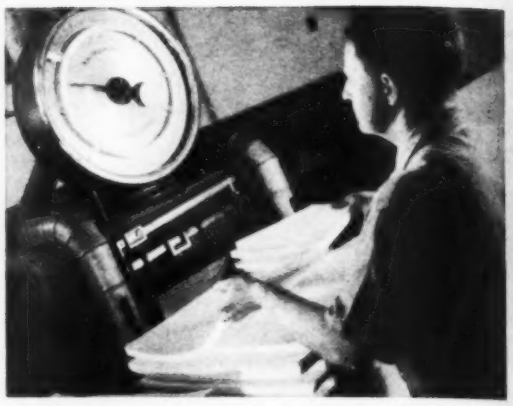

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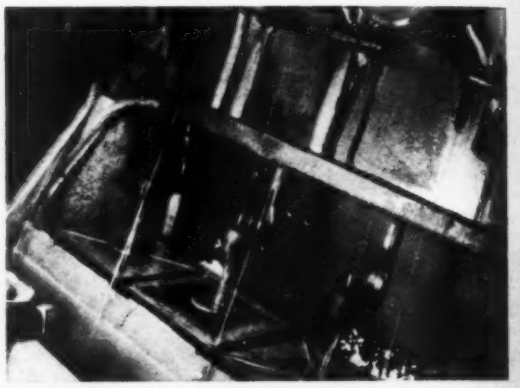

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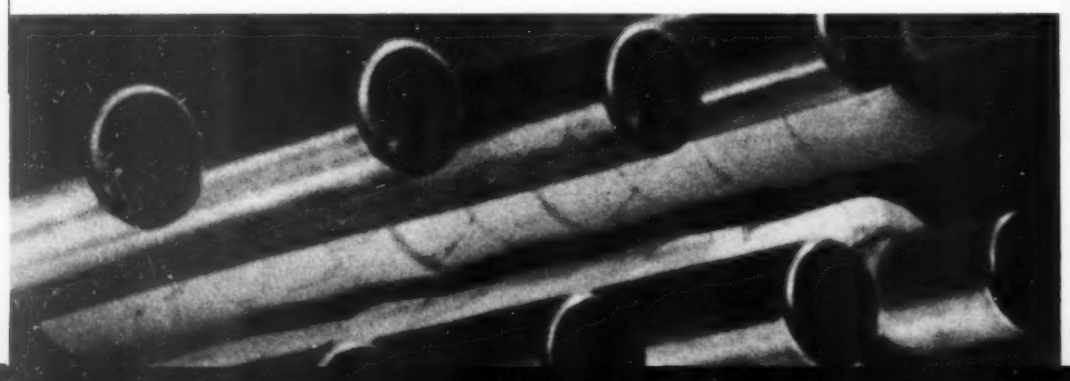

XUM

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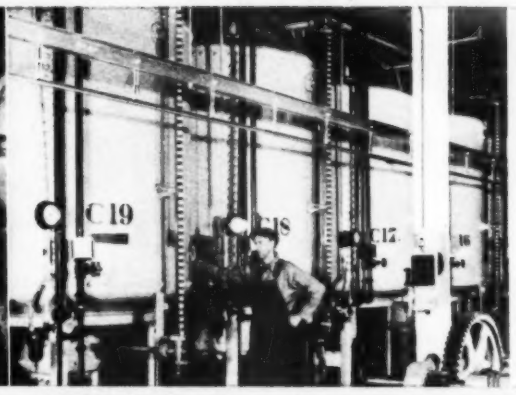

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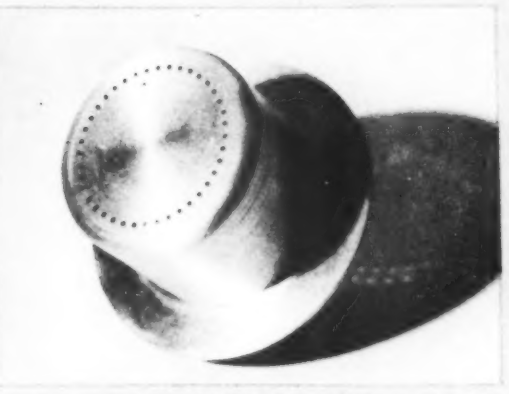

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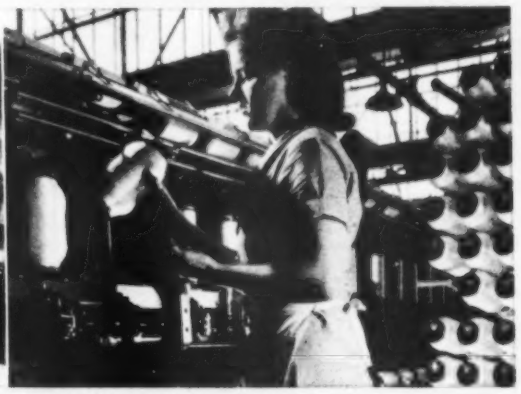

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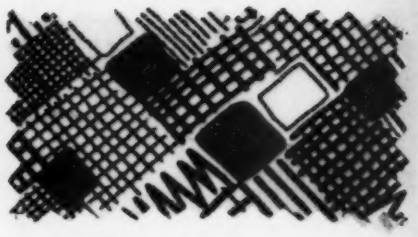
For Enka Rayon at the Fashion Level Please Turn the Page

XUM

Cri-Cri, an all-Enka rayon crepe. Its silky, velvety hand makes it adaptable for both draping and slim silhouette.

ONONDAGA

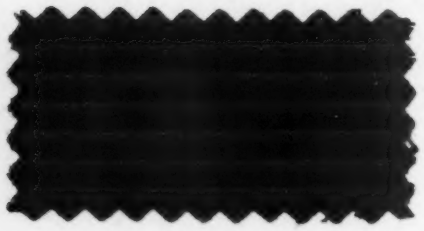


One of a group of *Mello-Charm* prints, this all-Enka sheer has a fine geometric print simulating woven texture.

BURLINGTON MILLS

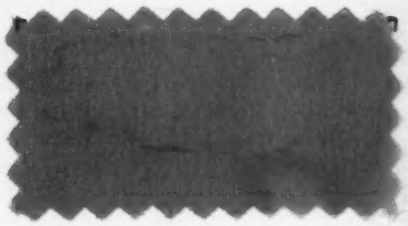
Sunbak, an interesting lining combining the practicality and warmth of 100% virgin wool for the back and the luxury appeal of Enka rayon satin for the surface of fabric.

WM. SKINNER & SONS



Two-tone, yarn-dyed, heavy ribbed faille, a dressmaker suit fabric which has both good body and suppleness.

WILLIAM ROSE



This chiffon of Enka rayon comes in extra width to accommodate the current full sweep of evening dresses.

STERN AND STERN

ENKA RAYON AT THE FASHION LEVEL

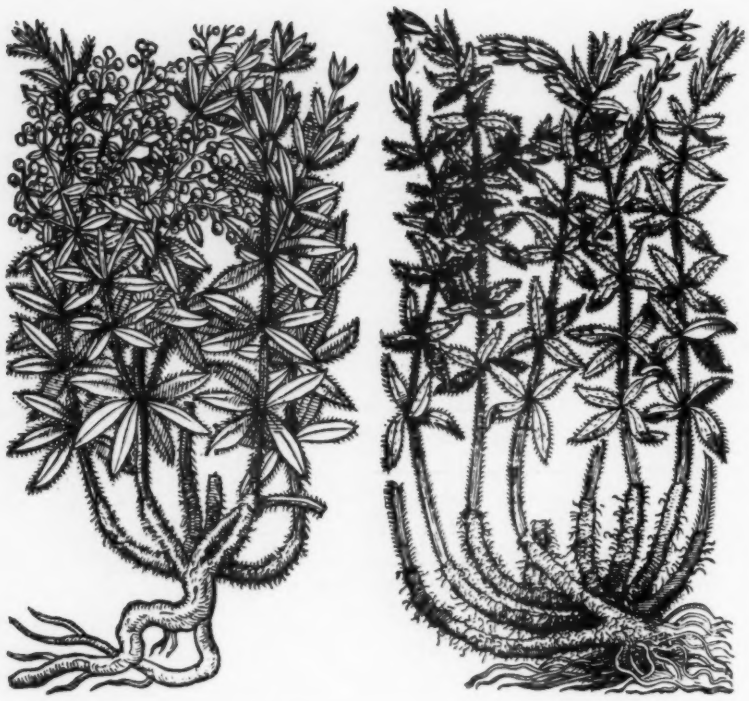
One of the most important functions of a textile yarn company is to keep abreast of the fashion and fabric developments and trends. Enka maintains constant communication lines with the fashion industry here and abroad. By day-to-day contact with converters, millmen, fashion designers and retail stores, Enka has been able to maintain liaison with the factors which determine fabric and silhouette trends that finally influence the size and type of yarns. This information also acts as a guiding post for the research laboratory in the improvement of existing yarns and the development of new fibers.

In conjunction with this program, Enka maintains a continuous fashion prestige advertising campaign in the major magazines in this field. Enka demonstrates in these advertisements the use made by top fashion designers of fabrics made of Enka yarns. This promotional approach not only aids the manufacturer of fine fabrics, but also the producers of staple merchandise, by creating a demand for all types of rayon fabrics.

AMERICAN FABRICS TRADE QUIZ

Here is a completion-type quiz for you to fill in. The statements to be completed are all concerned with names and trade names associated with textiles. Score 2½ points for each correct fill-in. 70 is passing; 80, good; 90, excellent. Refer to the bottom of page 110 for the proper answers.

1. *Purrey* blankets are a product of _____.
2. The _____ Company manufactures the *miracle yarn that makes things fit.*
3. *Fortisan* is made by _____.
4. Mission Valley Fabrics are made by _____.
5. _____ are the producers of Spun-dyed Fibro.
6. A well-known starchless finish is made by _____.
7. *Disciplined* fabrics are a product of _____.
8. *Hi-Plaidie* Tartans are made by _____.
9. The ever-popular Everglaze is manufactured by _____.
10. The *greatest cotton street in the world* is named in honor of _____.
11. *Signature* fabrics are made by _____.
12. Goodman and Theise, Inc., uses the name _____ for its fabrics.
13. Ametex is the trade name for the laces of _____.
14. *Element* Fabrics are produced by _____.
15. *Ski-time Denims* are a featured line of _____.
16. A new method of dyeing by the Tennessee Eastman Company is _____.
17. A new fabric made of 45% Orlon and 55% wool by Deering Milliken Company has been named _____.
18. *Taffetwill* is a featured material of _____ Mills.
19. The label that identifies the *finest woolens in the world* is _____.
20. A versatile ply-yarn sailcloth known as *Topsail*, is made by _____.
21. When you think of Toms River, N. J., you should recall to mind that it will be the home of _____.
22. *Sahara Colors of 1952* are being featured by _____.
23. *Nelo* fabrics are made by _____.
24. The book *Clothes Make the Man* was written by _____.
25. The well-known *Concord Pattern* bedspread is a product of _____.
26. The word *rayon* was coined in the year _____ *by* _____.
27. *Cypress, Elkridge* and *Sherman* are tradename ducks sold by _____.
28. The *Aristocrat of Rayon Yarn* is a trademark of _____.
29. Avcosols for chemical stability were developed by Atlas Powder Co. and _____.
30. The mills of American Bemberg and North American Rayon Corporation, owned by Beaunit Mills, Inc., are located in _____.
31. The viscose yarn manufactured by American Enka Corporation is produced in _____, North Carolina and in _____, Tennessee.
32. The fiber that is specifically used for blending with other fibers is _____.
33. *Tackle twill* was originated by _____.
34. The well-known *400 Finish* is a product of _____.
35. A plant that is celebrating its 70th anniversary this year is well known for two outstanding finishes, one for cottons and the other for viscose rayons. The mill and the finishes are _____.
36. The first cotton mill in this country, the Slater Mill in Pawtucket, R. I., began production in _____.
37. The well-known *Vivatone* awning stripe fabrics are made by _____.
38. Of the three great man-made fibers — Nylon, Orlon, Dacron — technically, nylon is a poly-_____ fiber, Orlon is classed as a poly-_____ fiber, while Dacron is a poly-_____ fiber.
39. The result of the reorientation of pure cellulosic fibers into a thread of longer, stronger filaments with exact molecular alignment was announced by the American Silk Mills, Inc. The yarn is called _____.
40. The well-known woolen house which features *fine fabrics are the foundation of fashion* is _____.



The Madder plant for centuries a mainstay of the dyeing industry.

THE ROMANCE OF COLOR

A story by* AMERICAN FABRICS' *Color Editor on the origins of color and color dyes from the dawn of history to the invention of aniline dyes.

By HOWARD KETCHAM

IT IS HARD TO IMAGINE a black and white world, a world of foggy half tones, a flat, shadowy, chiaroscuro world. No fresh green spring to lift and gladden the heart, no rosy burst of summer, no green hills and meadows, no golden play of sunlight, no many-lighted depth of sea and stream, no iridescent fish or phosphorescent marine life, no blue sky, no mackerel sky, neither sunrise, sunset, nor rainbow. No appetizing, mouth-watering color of food, nor burst of Renaissance splendor; no gay or elegant clothes, no cathedrals as we know them, or paintings, or palaces, or poems.

That man found food, clothing, and shelter in nature has meant his physical survival. But it is doubtful that his spirit would either have survived or soared to the heights it has in the history of art, religion, drama and literature without the color he found first in nature and later synthesized for himself.

Man has perceived color as long as there has been man, and perceived it with his emotions as well as his eyes. An elemental experience and part of our heritage as a race, the perception of color produces emotions as various as they are profound. We know that pre-historic man considered color a spiritual necessity as important as any physical necessity. We know that primitive peoples, in whatever part of the world they lived, used color to protect themselves from the spells of evil spirits. Color, for them, had magic properties. Before they began to believe in gods, they invested their colored symbols with the values of extra-reality. Long before they began to wear clothing, they used color to adorn their naked bodies. Millions of years before there was a Department of Agriculture or a Farmers' Bureau, they could tell when fruit was ripe . . . not by science, not by the calendar, but by color alone. Color served then to attract attention, it served as a mark of distinction, it served as a fomenter and warder-off of magic, it awakened, soothed and solaced the aesthetic sense of man.

Color also spoke a symbolic language. This language, made up of scores of immemorial color associations, is indelibly stamped on the pattern of our racial subconscious. Red — out of fire — means heat to us. Blue — out of the sky — means purity to us. Deep, dark black-blue — out of the cold night sky — means frigidity. Green — out of the first tender growth of spring — means freshness. Gold — out of sunlight, out of warmth — means gaiety and light.

Symbolic Meanings

But, beware! Colors by now not only have different symbolic meanings in different parts of the world, but have even upon occasion changed their symbolic meanings from era to era. Tradition, race, social convention, personal attitude and attitude to the world all play a part in what color means to an individual. We in the West, for example, mourn in black. But the Chinese grieve for their dead in white. The social history of purple is another of color's symbolic curiosities. Purple was the favorite color of the proud and mighty in the ancient East. Alexander the Great, perpetuating the customs of the eastern empires he had conquered, established purple as the ruling caste's distinctive hallmark. In imperial Rome, Nero forbade the unauthorized wearing and even the sale of purple on pain of death. Purple as a mark of caste continued throughout the ascendancy of Byzantium. Later, however, purple gave way to scarlet, but gave

way in an odd manner. For the so-called *cardinal's purple* of the medieval Church was red, in fact, and purple in name and repute only. Red then became the mark of power. But red, as every Valentine's Day reminds us, is also the color of love. In other words, a rose is a rose is a rose . . . but also, a rose by any other name . . .

It is not simple, then, the language that color speaks now to us and spoke then to primitive man. For color, as we have seen, is tinged again by our own emotions; its primary appeal is to our emotions. It is undoubtedly for this reason that color was linked in the mind of primitive man with magic, and that the discovery of the rarest and most precious dye, that self-same purple, was considered by the ancients so miraculous that they attributed its finding to a demigod, Heracles.

In the Beginning

The knowledge and use of color began with the dawn of civilization. In the beginning man utilized the colors he found in the earth and in the products of the earth. It is probable that the earliest dyes were discovered by accident, by-product stains from berries, fruits or nuts used as food. Later, as these were seen to serve their purposes, blossoms, leaves, stems, roots of shrubs, bark and twigs of trees were tried and found by primitive man to be practical as dyestuffs.

The art of using dyes seems to have developed independently, and been practised independently, by different primitive peoples in almost every region of the earth. Their technique was simple. They roamed the woods and fields collecting known dye plants or roots which they then boiled in hot water. The range of colors they were able to achieve was limited: red, blue, yellow, green, brown and black, with slight variations in shade and tone.

Their technique may have been simple, but the achievement if one stops to examine it was, after all, tremendous. It is common practice today to treat the discoveries of science and technology with awe and respect, and to waste no thought on the naive discoveries of our prehistoric ancestors. But the discoveries of science and technology are no more than the sum of patient, conscientious observation, an understanding of natural laws and a skillful intelligence. The unknown, unsung, prehistoric man who discovered the first dyestuff undoubtedly had more than his fair share of luck. But the generations upon generations of primitive men who followed him, so that eventually more than one thousand different plants, vines, shrubs and trees were used for extracting dyes, were as much scientists for their time as their modern counterparts. For they too observed nature painstakingly; they too, in their primitive way, understood natural laws; and they too were capable of translating their observation and understanding into creative action.

The Search for Brighter Colors

As the generations succeeded each other, and primitive society gave way to ancient civilization, man was increasingly successful in his untiring search for better colors, brighter colors and more varied colors. At the dawn of history indigo, the most important of all dyestuffs, was obtained from a plant in Asia. And who is to say which discovery was greater — the discovery of natural indigo or Kekule's representation in the last century of the benzene molecule as a ring structure, which contributed so largely to the synthesis of dyestuffs? For the solution to the problem of extracting the deep blue dye from the green leaves of the indigo plant was by no means either self-evident or easy. The processes of fermenting the leaves, reducing the dye and reoxidizing are complicated. They demand a discerning eye, a quick brain and the power to exercise both deductive and inductive reasoning.

A red dye, too, was extracted from the root of the madder plant. Madder, also used today as a dyestuff, was known from an antiquity so remote that it is not possible to say when or in which country the dye first originated. It was used very early

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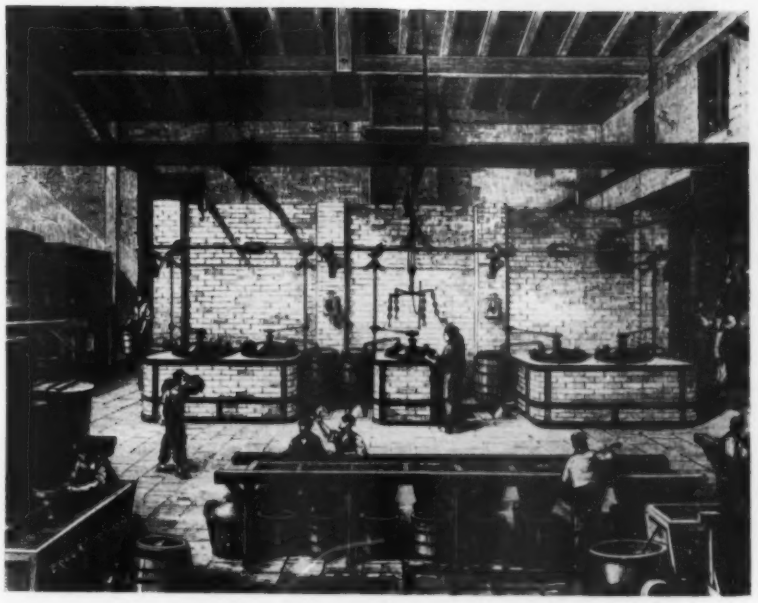
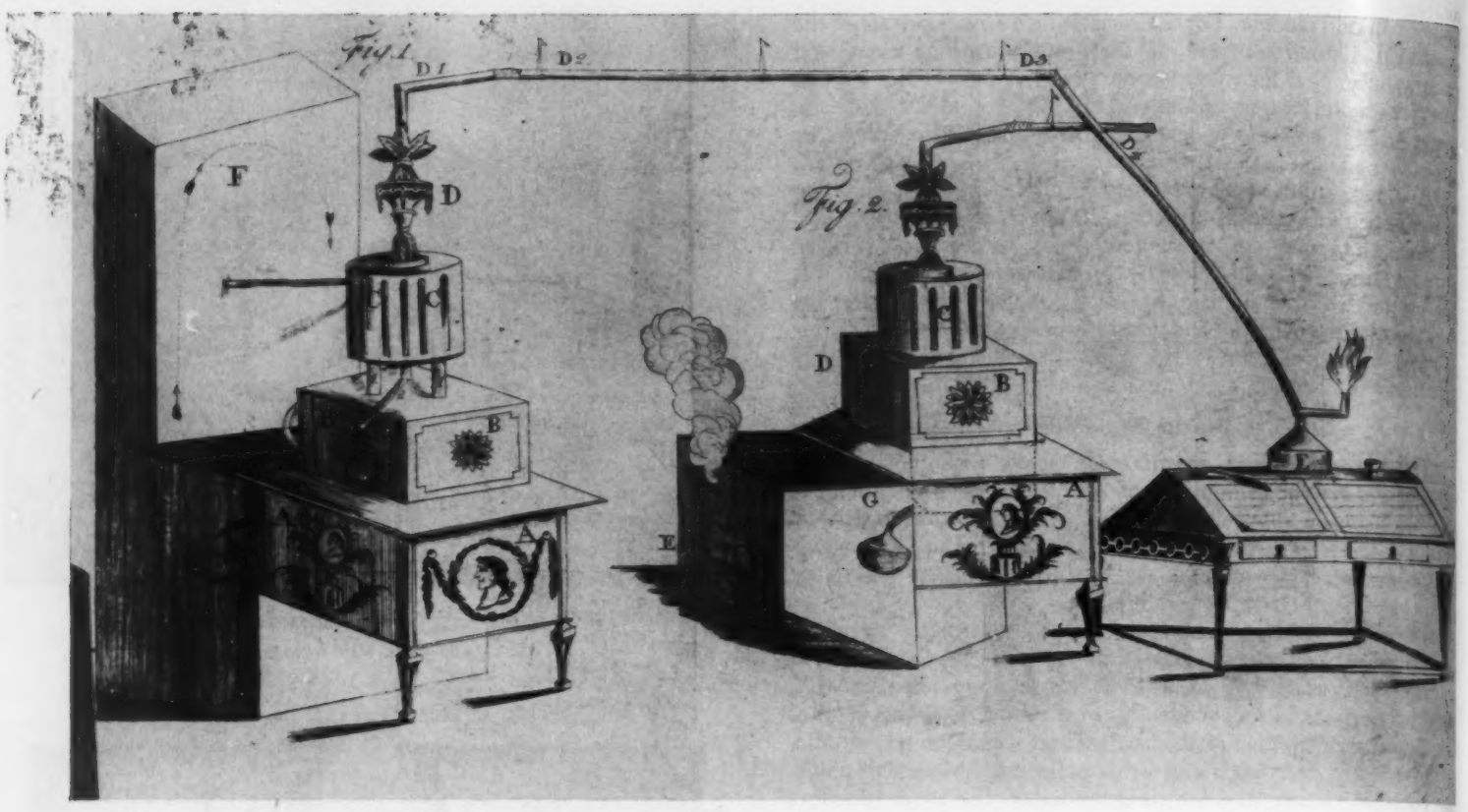


In the Nineteenth Century traditional methods and dyes were still being used.

Girl's dress from Celebes, dyed yellow, with painted red and black ornaments.

An Eighteenth Century dyehouse in full operation.



The use of coal gas lighting and heating led to development of many of today's dyes.

in India, we know, but it seems to have been equally well known to the ancient Persians and Egyptians, for red cloth, very evidently madder-dyed, has been found on Egyptian mummies of a pre-dynastic era.

Origin of Woad

The leaves of the woad, a plant thought to have originated in southern Europe, like indigo provided a blue dye. It was early discovered that young leaves gave a light blue dye, mature leaves a darker blue, and fully ripe leaves a bluish-black pigment. Woad was grown in ancient China in order to provide the blue dye. It was undoubtedly also cultivated in pre-dynastic Egypt. And William F. Leggett in his book *Ancient and Medieval Dyes* tells us that Julius Caesar encountered woad in Britain 2,000 years ago. He writes:

> *Caesar found that the aboriginal inhabitants, an ancient Celtic race that had invaded the country after the Stone Age, and who were called* Picts *or painted people, had long punctured their skin with flint tools, and into the abrasion had rubbed anil of the woad plant, and thus formed various designs.*

Caesar himself wrote in his Commentaries: "All Britons stain themselves with woad which grows wild and produces a blue color which gives them a terrible appearance in battle." (Blue apparently did not suggest purity to Caesar!)

Prior to introduction of indigo from India, which did not take place until the Sixteenth Century, woad was the only blue dye used in western Europe, and it was more used, incidentally, than all the other dyes combined. The earliest plant to be cultivated for its pigment content, its preparation was complex. The pulp was crushed, placed in small heaps to drain and, when sufficiently dry, kneaded into balls three to five inches in diameter, and each about five pounds in weight. These were spread on wicker trays to dry for four weeks, then put away in storage until the whole crop had been gathered and processed. When the crop was in, it was all subjected to a process of fermentation. For this, each ball was ground into a fine powder, spread on the floor of an open shed and sprinkled frequently with water which reduced it to a paste. For nine weeks the hot, fermenting mass of paste was turned and watered. This fermentation process had to be watched very carefully. If it went too slowly, too bulky a product resulted. If it went too quickly, the dye was impaired. When the right fermentation was finally complete and the stiff paste sufficiently cooled, it was packed into casks ready for the market, one part by weight of finished pigment being obtained from nine parts of woad leaves.

Saffron and Other Dyes

The ancient Greeks and Romans extracted saffron, their principal yellow dyestuff, from the pistils of the *Crocus sativus*, a fall flowering crocus. The plant had long been cultivated in Persia and from there had found its way with the Mongol nomads into China, where it was at one time used in the dyeing of carpets. In Rome, the streets were strewn with saffron whenever the Emperor returned with his army to the city. In Greece, it provided at one time the official color. Later, in the Middle Ages, it became one of the principal articles of dawning trade, for it was used not only as a dye but as a spice and drug as well. It even gave its name to a war, the *Saffron War of 1374*, during which a consignment of 800 pounds of saffron was seized as booty.

It would be tedious to go through the entire list of plants ancient men utilized for color. There were, as I have indicated, hundreds of others, many of them with histories as ancient and interesting as those already discussed. The lore of indigo, for example, is full of fascination. It was anciently classified as an

astringent medicine; it was one of the prides of Venetian commercial artistry; and the American Indians who often tinged their birthday suits a blue-violet color used for this purpose a local plant closely resembling the indigo plant of Asia.

Ancient man used trees as well as smaller plants for his dyestuffs. Nine varieties of Brazilwood, for example, were utilized at various times in various countries. These medium-size redwood trees were cut into small, regular sections, after which the units were rasped to coarse powder, moistened with water and fermented for five or six weeks, in order to increase the coloring properties of the wood. Brazilwood gave all kinds of fabrics, except silk, a bright red color.

Logwood, still important today despite the advent of synthetic dyestuffs, is used principally now as a black cotton dye. In its heyday it provided purple for wool dyeing, blue and black for cotton and wool, and black and violet for silk.

Ancient Animal Dyes

While ancient man was successfully exploiting the vegetable kingdom for his color, he did not neglect the animal world. The development of a purple dye from the purpura shellfish of the Mediterranean is one of the most interesting chapters in the annals of dyestuffs. Legend, perpetuated on the coins of Tyre, has it that Hercules' sheepdog when biting into a shellfish stained his jaws bright red. The dog's master, the story goes, noticing this, immediately ordered a gown to be dyed with the newly found color. Fact, based on the records of historians and archaeologists, tells us that Tyrian purple dye was made in Crete as early as 1600 B.C. and brought prosperity to Tyre, through its distribution by the sea-faring Phoenicians.

Purple is not the oldest color known to man, but from the day it was first manufactured in the ancient factories at Tyre, Tarentum and Palermo, it had its identity as the rarest and most costly color with which man could adorn himself and his property. During Diocletian's reign it was so rare that wool dyed with it is said to have cost $350 a pound. We know this because the plaint of an irate husband whose wife treated herself to some purple wool is recorded by an ancient historian. Perhaps this is the first recorded instance of a husband complaining about the cost of his wife's shopping jaunts.

Not only shellfish, but insects were pressed into service for making dyes. The oldest of all insect dyestuffs comes from *kermes*, an oriental field louse living on the leaves and stems of low, shrubby trees with prickly leaves. Kermes, processed, provided a deep, bright, red dye. From cochineal insects, too, was obtained a rich, red crimson. And other dyes were made from minerals, ores and mineral earth substances.

Artistry in Color

The modern art of color had its beginnings in the great periods of Egyptian, Grecian, Roman, Gothic and Renaissance art and architecture.

The early Egyptians had a penchant for brilliant colors, living, as they did, in the full glare of the sun. The sun beat down upon them all day, its brilliance rarely interrupted by rain. For protection against the heat, homes were built virtually windowless. Still, wishing to live in coolness, the Egyptians did not desire to live in dull gloom. So they ornamented the walls of their homes with strong, bright colors, the use of which their life in perpetual sunlight had taught them.

Because of the absence of rain in the Nile valley, the brilliance of the original wall colors has been retained for centuries. Strong, bright colors, of course, reflect light best, and there is evidence dating back as far as 4,000 B.C. to show that the Egyptians were aware of this and were the first known appreciators of color's ability to reflect light. To this day, vivid ceiling hues, cool colored walls and glowing rugs turn heavy shadows into rich bloom. Much of our present-day knowledge and use of color in dark places owes its success to the lessons learned

Heracles of Tyre discovers purple dye when his dog bites into a sea shell.

and handed down from early Egyptian colorists.

Beyond this the Egyptians did little to develop the art of color, for they were content to repeat their traditional color associations through the centuries.

Early Standardization

It is to the Greeks that we owe the origin of color standardization. They set up definite color conventions, among them the practice that no two adjoining architectural members or parts of a figure should be the same color. For example, a blue cornice and a blue gutter could not be used together. One or the other of these members had to be in an alternate color. Color realism, harmony, balance and rhythm also originated with the Greek colorists. Their contributions have played a basic role in the progress of color artistry. While Rome in its turn contributed the concept of order and efficiency to color art, it is to the religions of all ages that we owe ideas expressed in color in temples, decorations, vestments and religious objects of all kinds.

Among the ancients, the Persians and Chinese are regarded as the world's finest colorists. Their palettes included such notable and delicate hues as powder blue, a background color used chiefly for ornamental patterns; and mazarine, a blue not unlike Nankin, favored as a base for design accents. The Chinese prized greens, particularly apple green. Today, Chinese tints are still favored for modern wall decorations and woodwork. The delicate colorings of the early Ming and Sung porcelains, notable examples of color art at its best; the dainty transparent quality of the bluish-green-greys of Fenching ware dating back to 1,000 A.D.; fine buffs, biscuit colors and creamy whites — these are all widely used to this day.

Through the Ages

Man used color through the ages as the breath of the life of the spirit. But much of the knowledge and art of color, and most of the technique of the dyer, were lost during the barbaric ages

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that followed the downfall of Rome. It was the Venetian merchants of the Thirteenth Century, those same merchants who did so much to revive ancient arts of all kinds and transmute them into the stuff of commerce, who imported Oriental dyes and gave the impetus for the rebirth of color in goods, in art, in clothing and architecture.

From that time on, the palette grew, dye-plants began to be cultivated all over western Europe, and chemists beginning their experiments in the Seventeenth Century started to investigate intensively the nature of color and the dyeing process. Between 1700 and 1825, six French chemists rendered yeoman service to the art of color by investigating the chemical properties of dyeing, by publishing accounts of the various processes in use, by examining the nature and properties of known dyestuffs and by explaining what they knew of the phenomena of dyeing. During the Eighteenth Century, very rapid progress was made. Modern chemistry had been born and certain chemical products and processes were seized upon by the dyer. Prussian Blue was developed in 1710, Saxony Blue or Indigo Extract in 1740, and before the end of the century, sulphuric acid, murexide, picric acid, carbonate of soda and bleaching powder had all been added to the dyer's technique.

Down to the middle of the Nineteenth Century, the dyer was dependent, with but rare exceptions, on natural dyestuffs, on the products of the earth — vegetable, animal and mineral — with which prehistoric, primitive and ancient man had worked. Then, in 1834, the German chemist Runge noticed that aniline, one of the products resulting from the distillation of coal-tar, became a bright blue when bleaching powder was added. Twenty-two years later, in 1856, the English chemist Sir W. H. Perkin turned this observation to practical use. He prepared the first aniline dye — mauve — a color so celebrated that it gave its name to an era.

But more than giving its name to an era, the first aniline dye provided the basis for a gigantic new industry — the synthetic dyestuff industry, which has done so much to revolutionize the way we look and our habits of living. The story of the coal-tar derivatives, and the development of the synthetic dye industry, is a chapter in itself. For its story is the story of color's coming of age — to be told in the next issue of AMERICAN FABRICS.

Woad, one of the oldest of dyes, was widely cultivated till the end of the Eighteenth Century.

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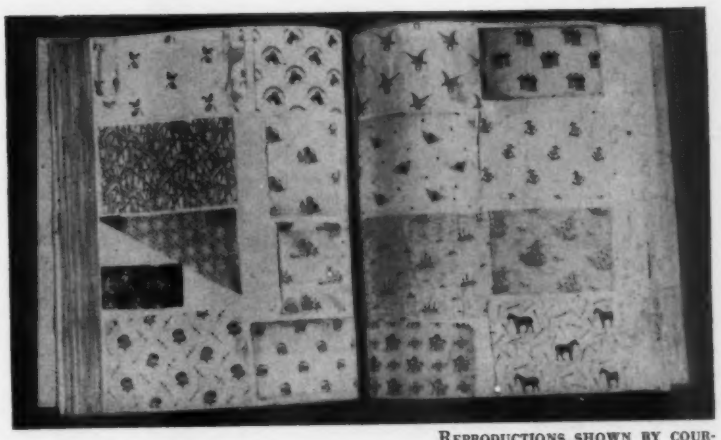
Leaves from a Designer's Notebook



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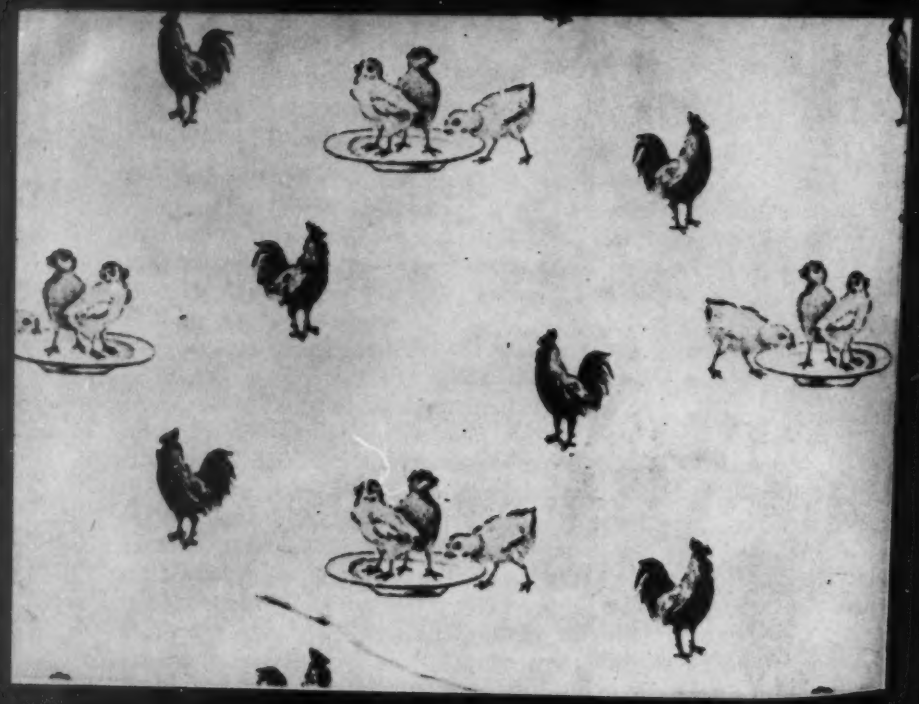
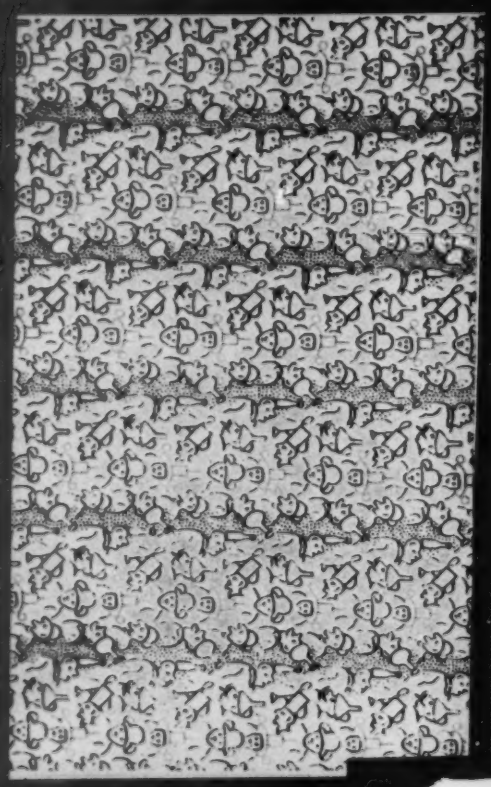
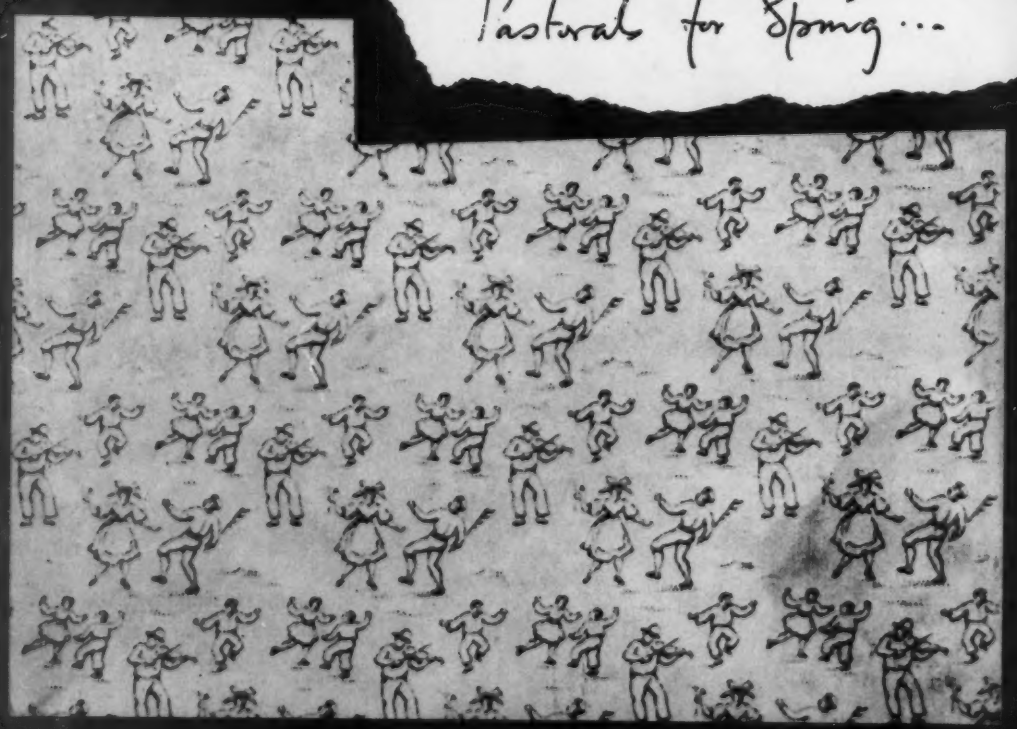
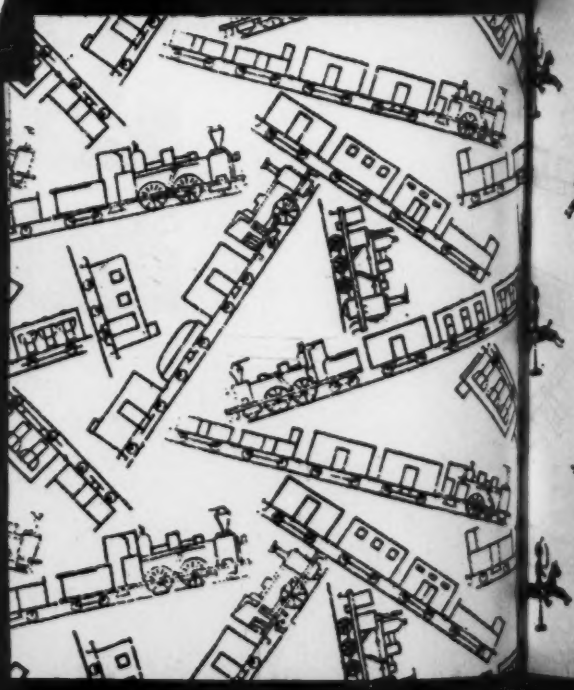




Pastorals for Spring...





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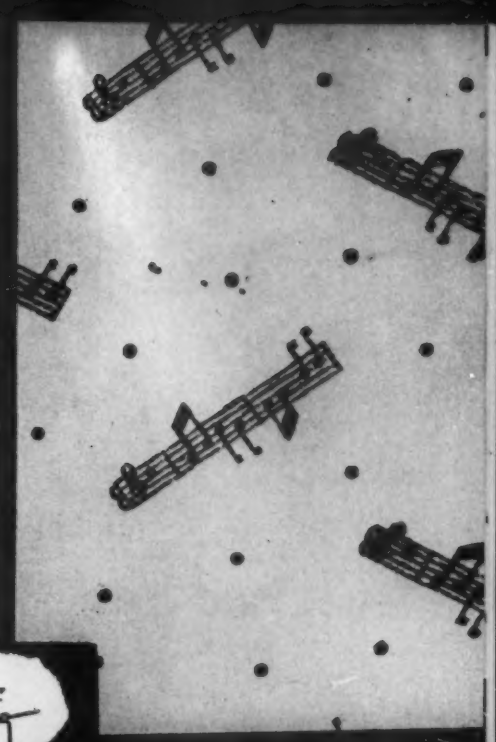
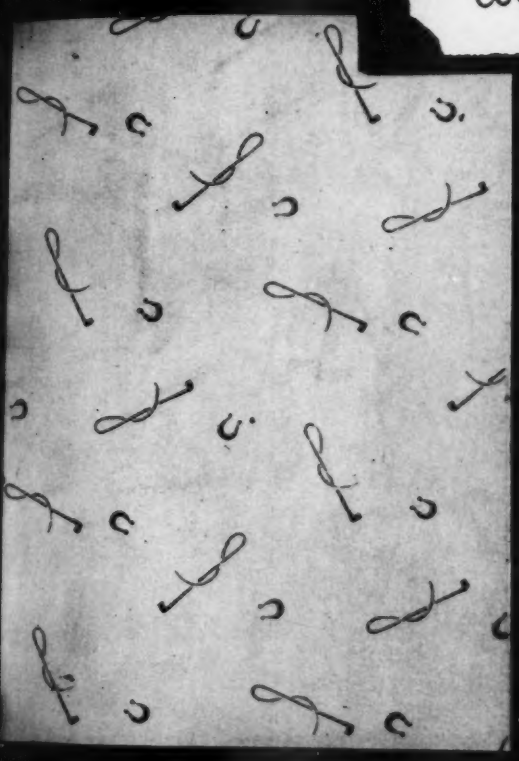


Whips and Dogs for Hunting



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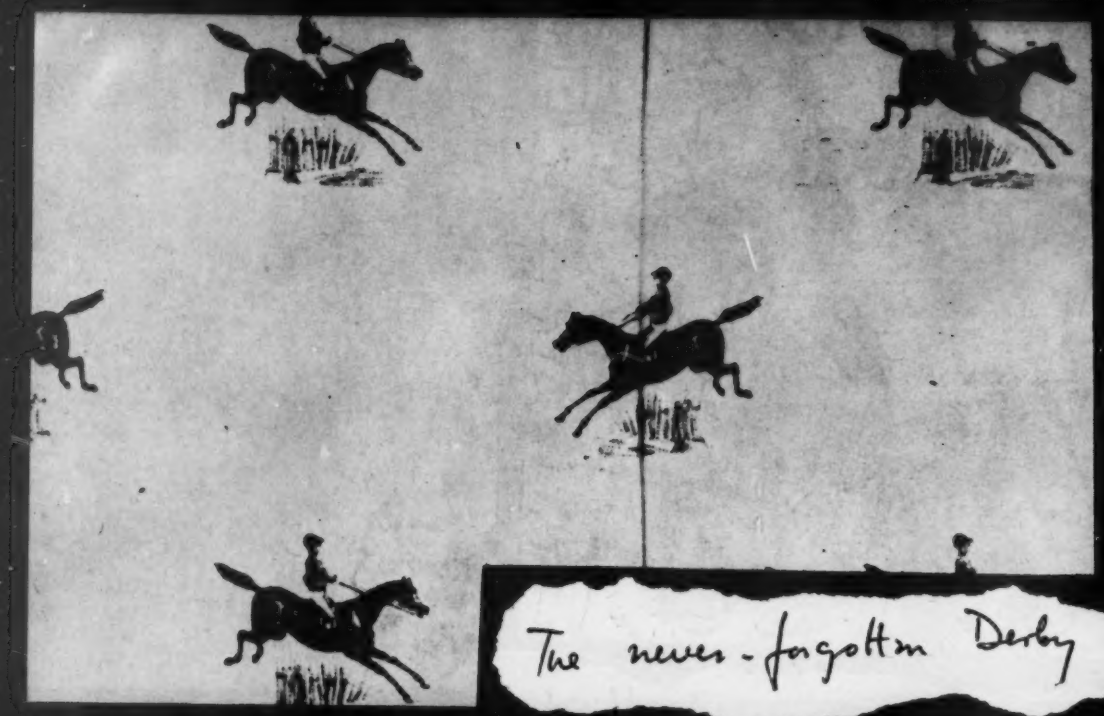
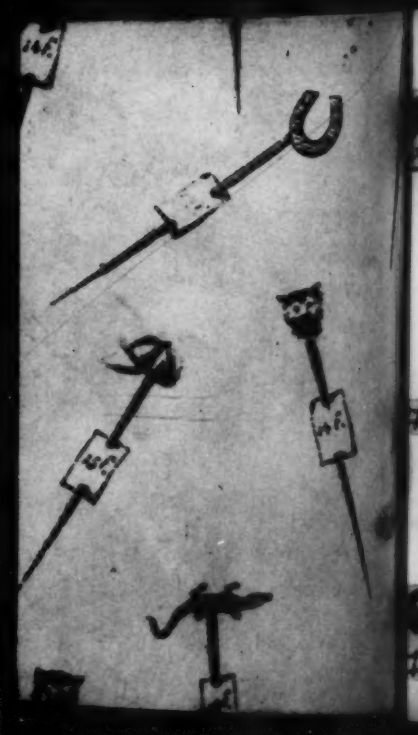


The never-forgotten Derby



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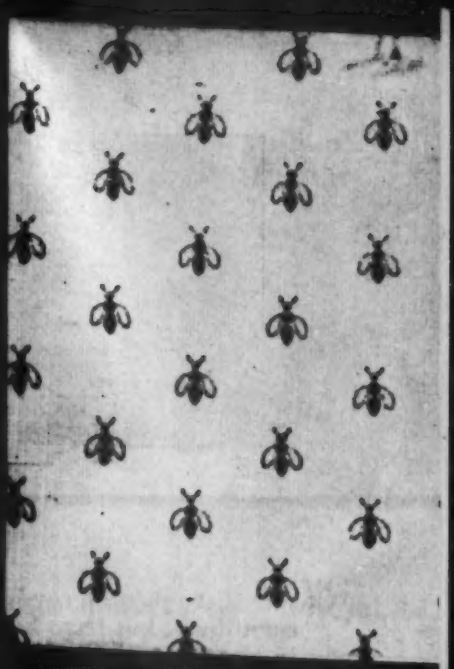
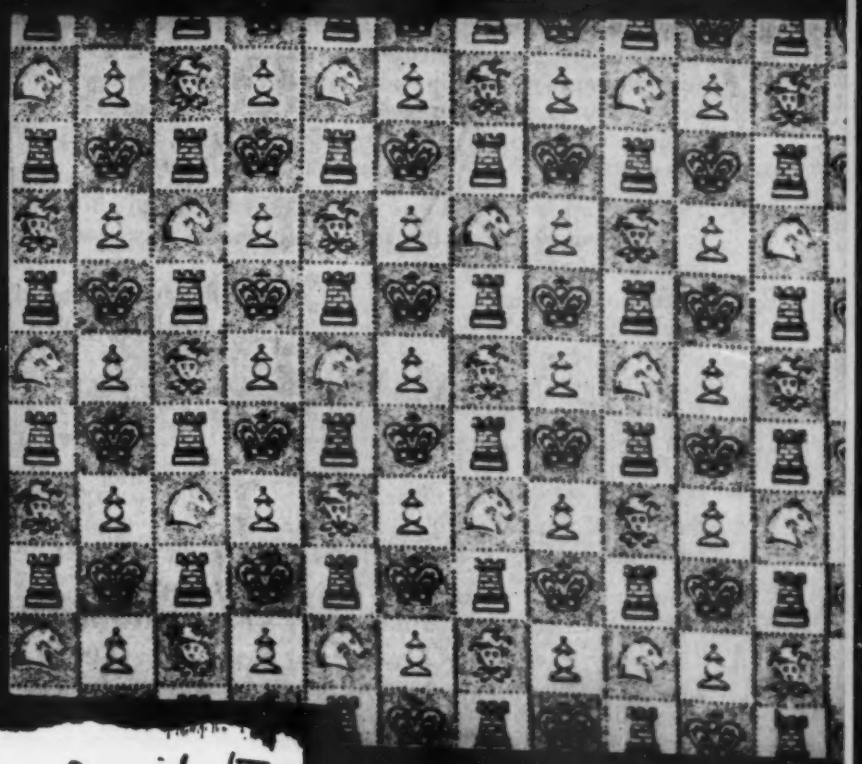
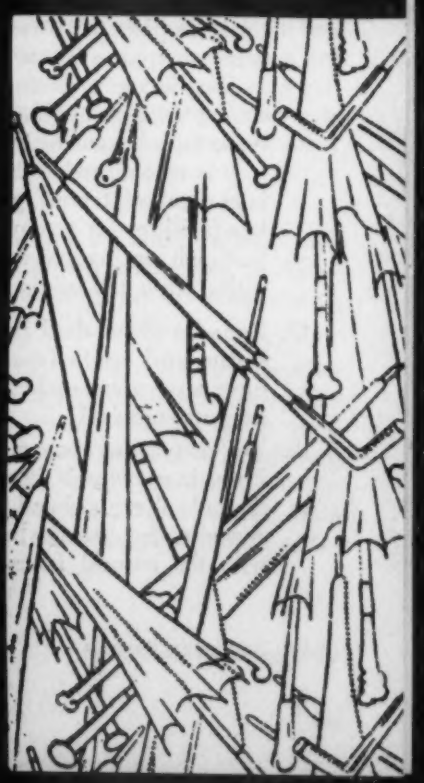




Over the post and rails
a fast finish ...



THE CONSUMER

The millman, the converter, the apparel manufacturer, the retailer, the retail clerk . . . all constantly use textile words and phrases as selling blandishment . . . all assuming that Mrs. Consumer knows what they're talking about. Sadly enough, a good deal of it is incomprehensible to her. And so writer Cora Carlyle gathers a

Q. Are there printed corduroys on the market? I have not seen them, but have heard that they are to be obtained in certain stores.

A. There are indeed. Many corduroys, for example, are printed to simulate tweeds; others show regulation prints and plaid patterns; tartans are popular at present. An interesting thing to observe is that many corduroys are printed on both sides with the same pattern, in order that the color may appear to be woven in instead of printed. This is really a splendid development in printing that is going over very well. You will see this effect in boys' caps, slacks and jackets particularly.

Q. In some advance fashion releases about fabrics I note that *organzine* is coming into prominence. Can you tell me just what this is?

A. Organzine is actually a method of twisting two yarns into a single yarn. Usually the two yarns have been dyed before they are twisted together and very often they comprise the warp in woven goods. The opposite of organzine, tram, is the name given to filling yarn in material. Organzine is a strong yarn and one that needs no extra sizing or starching during the weaving process. Further, the finished cloth resists spotting and holds its shape well. The twist in organzine gives a pleasing touch to the finished fabric, and when made of man-made fibers it approximates the feel of silk, an important factor with the consumer.

Q. How can I best clean my Wilton and broadloom room-size and scatter rugs? Should I try a good shampoo?

A. The National Institute of Rug Cleaning gives an answer to this. The rug shampoos for consumer use are good for the occasions when unexpected spots and stains occur, and then only when the directions are strictly followed. Otherwise, a cleaned spot is likely to show up prominently. A shampoo, however, will not take the place of a regular cleaning by a professional. The amateur application of a superficial shampoo product leaves residue in the carpeting and the rug tends to become dirtier shortly after the application. Bleeding or running of colors may occur as well, causing the carpet to crush and mat more quickly.

It is recommended that a professional rug cleaner be called in at regular intervals, perhaps once or twice a year. The cleaner has facilities for removing embedded dirt and grime and for thorough rinsing and rapid drying. Your rug will be returned with a fresh and bright look, along with a lively pile effect.

Q. I read a great deal in the papers about ways to remove stains and spots from garments, but I do not seem to have any success when I try to take out these stains. What do you suggest?

A. The removal of spots and stains is not so easy to effect now as it was in grandma's time when wool, cotton, silk and linen were the only fibers at hand. At that time there were tried-and-true remedies for practically each type of stain. Today, however, with the natural fibers, the man-mades, and the numerous blends, the field is much larger and presents more problems.

The National Association of Cleaners and Dyers are authorities in this field. They point out that food stains, for instance, give more trouble than any other type. These stains and the fabrics upon which they are deposited vary so much that the best answer they can offer at present is: SPONGE WITH PLENTY OF WATER AT ONCE. This treatment is likely to remove the water solvent sugars, and this is a help. Stains from other foods . . . butter, eggs, gelatin, cornstarch . . . are really not for home treatment.

The best advice that can be given beyond this is: Do not press a garment that has been stained since the stain will thus become set in the fabric. Send the garment to a good dry cleaner and mention what the stain is composed of so that he can give it appropriate treatment.

Q. You may not realize it, but many of your readers like to dye and re-dye household fabrics; in fact, a group of women in our community are doing this as a useful pastime and we like the work since it brings out many interesting points in regard to color and color principles. Up to now I have been using my bathtub to tint large size items such as bedspreads, sheets, curtains and slipcovers. This method has been all right to a certain point, but it has meant much stirring, watching of temperatures, following directions and so on. What I would like to know is whether I can use my washing machine for home dyeing of the large, bulky pieces.

A. You can use your washer to advantage in this work. All the companies that issue home dyes have given directions for this purpose, and you would do well to consult them. In general, the washer is filled with the hottest water available. The clean, wet article is put in after the home dye has been added. After agitation and circulation, two cool rinse waters are suggested. Drying is carried out according to your own facilities.

The Rit Corporation, among others, gives excellent directions for all necessary steps. The amount of dye required per pound of slipcover, for example, is given. You will also learn how to use a color remover, if necessary. In addition, you can learn the following: how to use an all-purpose dye, how to clean the machine after dyeing, how to plan a new color in case a fabric has a definite pattern, and so on.

Q. I have seen a very attractive cotton suit with velvet collar, cuffs and cut-out trimming in my favorite shop. I would like to buy this but am afraid that the garment may not wash well. The store said it should be dry-cleaned. Can you advise me?

A. If you wish to launder the garment yourself, we advise you not to invest in the velvet-trimmed cotton suit unless you are an expert in restoring the pile effect of the velvet. Since the shop does not recommend laundering you would have no redress in case the suit turns out badly after washing.

WANTS TO KNOW...

group of typical Mrs. Consumers before each issue goes to press . . . asks them what they'd like clarified in textile terms . . . and puts the questions to Dr. George Linton, Textile Editor. Here is the latest group, and the answers may provide illuminating information for the benefit of many readers.

Q. How is it possible for cotton fabrics to be acceptable for fall and winter? To me this sounds very revolutionary; I have always thought of cottons for summer wear only.

A. There has been a marked change in the use of cottons. This has been a definite trend for some time, but this year cotton has become generally accepted for all-year-round wear. Cotton is now appearing in bulky, fluffy pile fancies, corduroys, velveteens, flannelettes and many other high fashion fabrics. Cotton denims, as you probably have observed, are important and the run on them has been tremendous. Thick cotton suitings, flannels and fluffy dress fabrics are already here. Many of the weaves are take-overs from the long-accepted worsted weaves, and even prints are coming into prominence. One reason for the acceptance of cotton in winter is its pleasant feel to the skin. It is, besides, smart and washable, and the prices seem to be fair.

Q. Having read in several fashion and pattern news items that rick-rack braid is a popular finish for cotton dresses this season, I bought some to use in making dresses for my young daughter. It seems, however, quite a task to sew around the V-shaped edges and I am wondering if I am doing it correctly.

A. The application of rick-rack as a finish or trimming is relatively simple. You need not even turn under an edge to which the braid is applied unless the fabric frays easily. Merely guide the sewing machine foot along the center of the braid, and do not try to follow the V-shaped edge. This sewing method will leave the edges free, so that a rounded corner or design can be readily followed.

Q. The vogue of dark felt and straw hats piped and trimmed with white fabric appeals to me very much, but I hesitate to buy one because past experience has taught me that the original fresh whiteness soon becomes drab with soil and I have to *retire* the hat. Is there any simple method of cleaning the white parts?

A. If the trimmings are of rayon, it is suggested that you use carbon tetrachloride, procurable in any drug store. Place the soiled area against a terry towel, and work carefully so that the fluid does not touch the rest of the hat. If made of cotton, apply peroxide and, here again, be careful that the solution does not come in contact with the hat itself.

Q. In laundering my daughter's dresses and my husband's shirts, I am, of course, tempted to use a cold starch solution instead of a boiled starch since the former is so much easier to use. I do not, however, obtain the same results. Why is this?

A. Cold starch is easier to handle because by this method cold water is mixed with the starch, stirred and then squeezed into the fabric. The boiled starch takes a little time as it has to be cooked thoroughly and stirred during cooking until the solution is clear for straining and no lumps or scum are present.

The trouble with cold starch is that it seems to give a dull, stiff, scratchy and rather brittle finish; there is also the tendency of its sticking to the iron. A cooked starch tends to penetrate the fabric and give it a supple, natural feel. Cooked starch, furthermore, is kind to fibers because it does not stiffen them to the point of possible breakage during wear.

Q. What is meant by a *non-woven* fabric?

A. It is a web or sheet of textile-type fibers which have been bonded together by the application of narrow stripes or patterns of adhesive material, or by bonding the fibers by a self-produced or an independent action of the surface, either chemically, or by heat if thermoplastic fibers are used.

One of the main factors in this type of material is that the expanses of the web have freedom of fiber movement since the bonding material is in minor proportion to the fiber content, or the adhesion is self-developed from the fibers themselves.

The nature of the fibers is such that they constitute the quality of a sheet of this type, and the unification material serves only to hold the fibers in place so that advantage of the physical properties of the fiber may be taken to the fullest degree.

Q. At a recent convention for the apparel trade a speaker mentioned *stoting* several times in the course of her talk. Since no effort was made to explain what this is, please be so kind as to supply me with an answer.

A. Stoting is an operation by which two edges are sewn together by means of a stitch taken through and over at the same time. Its purpose is to obtain thinness, so that the join may be less prominent than a seam. It is generally used where seams are not supposed to be, either on the inside or the outside of a garment. Stoting is resorted to in piecing facings inside, in cuts under rolls, and in the re-weaving of holes, burns and other damaged areas in a garment.

Q. I have been reading much about blended fabrics and have wondered if blending may not mean that perhaps a good fiber has been combined with an inferior one to *piece* it out and perhaps lower the quality.

A. What you say about blended fabrics is definitely the exception and not the rule. Usually the blending of fiber gives a new character to the fabric. Modern and up-to-the-minute textile technologists have acquired the intricate techniques of combining fibers to obtain desired effects . . . bulkiness, sheerness, smoothness, light weight, resilience, little stretch, little shrinkage, little wrinkling, abrasion resistance and numerous other qualities demanded by fashion and consumer desires.

WHERE DID IT COME FROM?

The Origin of Textile Fabrics

Where did our fabrics originate? How were they developed? How did they get their names? No field has a more colorful and interesting historical and geographical background than textiles. To trace some of the better-known fabric names to their origins is to uncover an exciting panorama of textile tradition. Each name not only identifies a fabric, but contains frequently, as well, a key to its development, history, manufacturing process and use. On the following pages the most significant and widely used fabric names are traced to their sources. For the reader's convenience, they have been grouped in alphabetical order under the name of the country where they originated or with which they are ordinarily associated.

from AFRICA

Berber is a lightweight, satin-faced fabric, made of all silk or of cotton back and silk face; it came into prominence at the turn of the present century when the famous English General, Gordon of Khartoum, defeated the Berber tribes in his campaign in North Africa.

Mozambique, named for the island off the east coast of Africa, is a staple decorative cloth of the grenadine type made with large floral effects in relief to form the motif. Originally made of silk and thus one of the more expensive materials, now available in acetate and rayon.

from ARABIA

Mohair comes from the Arabic *mukay-ar* which means fabric made from the hair of goats.

Sarsanet, in Arabic, implies a silk veiling or net. The cloth is still popular in the veiling and millinery trades today.

Quoton, as the Arabs speak of cotton, is a derivative of the Indian term for cotton, *goton*.

from ASIA MINOR

Biaz is a linen or cotton fabric used as dressgoods and is still a staple fabric in the area. Cotton cloth of this name is finished to simulate more expensive linen fabrics.

Damask, which originally meant any richly decorated silk fabric, was brought to the Western world in the 13th Century by Marco Polo from the Far East. Damascus was the chief city or clearing center between East and West and its name was given to these exquisite, expensive silks. Damasks, brocades, brocatelles and comparable fabrics have different characteristics today, but they are all manufactured on the general principles of the original damasks and all are now made on Jacquard looms.

from AUSTRIA

Austrian Cloth is one of the finest woolen and worsted fabrics to be found anywhere today. Made in Austria for many years, the fabric is produced from the highest grades of merino wool obtainable, either Austrian Silesia or Botany Bay-Australian wool. It is used for men's formal wear.

Silesia is a popular lining fabric known by its smooth finish and good structure when made from combed cotton yarns. There is today, however, a wide range of lining material known by this name. The weave is a small twill — 1-up and 2-down, right-hand or left-hand construction. In the woolen trade, Silesia or Silicia implies a high grade suiting fabric made for over two centuries in Austria. Merino wool, Class I in grade, is known as Silesia wool in Austria.

from BELGIUM

Diaper fabric of silk, with small square or diamond effects, was originally made in Ypres. The word *diaspron*, from the Greek, means *small-figured*, and present day diaper fabric, well-known in many households, received its name from *Cloth d'Ypres* which has been contracted into the English word *diaper*.

Malines is one of the oldest and best known of lace, net and silk fabrics diaphanous in nature, and named for this city of Belgium.

from CHINA

Some of the fabrics of China have been made for over 5,000 years and it is interesting to note those materials that are popular today.

Canton silk was first made in Canton, one of the oldest silk areas in the world. Made with a satin weave, the fabric has long served as a popular staple dressgoods throughout the world.

Canton Crepe, which uses silk from the Canton area, is identified by its crepe weave, a derivation of the plain weave, in which certain raisers are left out in the weaving in order to make small floats in the goods for a pebbled effect and feel. The yarn is of high twist, which adds to its wearing quality and its ability to resist friction and chafing.

Canton Flannel, identified by its nap on one or both sides, is a medium-to-heavy weight cotton goods. It is made from a 3-up and 1-down or a 4-up and 1-down right hand twill weave.

China Silk, when used as a fabric term, is any lightweight cloth made of silk produced in China. Much of the goods is flimsy; and the texture and grade have wide variance.

Crepe de Chine, a very fine, lightweight silk made with a crepe weave, is usually constructed with raw silk warp and crepe-twist silk filling, alternating with 2-S twist and 2-Z twist. Usually piece-dyed or printed.

Habutai means *soft or spongy*, an appropriate name for this fabric commonly made on hand looms in China and Japan; it is heavier than its counterpart, *China silk*, a fabric which it resembles in other respects.

Nankeen is named for the ancient city of Nankin where the cloth was first woven on hand looms with cotton yarn in warp and filling. It is usually made with local cotton which has a natural yellowish tint and is dyed buff or yellow when made from other cottons.

Pongee, from the Chinese word *pun-ki*, which means *woven in one's home*, is made from wild or Tussah silk in the natural or ecru color of the filament. Very uneven in yarn and texture, it is noted for its many nubs and slubs in the yarn.

Satin was first made from silk and woven in satin weaves, either in warp effect or in filling effect. The original fabrics were called *sztun*

until the Renaissance; then the Italian silk manufacturers changed the term to *saeta* to imply *hair* or *bristle,* a term which can be applied to fabrics of this type since they show a hairline and glossy surface.

SHANTUNG comes from the province of this name and is a native reeled silk. Many types of natural imperfections characterize the goods and at times, the more uneven and nubbier the fabric, the better it was supposed to be. Shantung is still a favorite for women's wear.

from DENMARK

BURLAP, strange as it may seem, comes from the Danish *boenlap,* a rubbing cloth that withstands hard usage.

DUCK is also of Danish origin. *Doek* was the name given to cotton fabric used for sailors' summer wear, particularly pantaloons and caps.

from EGYPT

ALMA, a mourning fabric which has been known among the Egyptians for centuries, is made from cotton or linen and dyed black or purple.

FUSTIAN was a low quality, coarse cotton cloth first made in the Fustat or Ghetto area outside the city of Cairo. The Egyptians used a double cloth construction to make this goods which, despite the fact that it was regarded as an inferior material, gave long wear. Some better grade cloths were made from linen. The fustian of today has changed much from the original material and implies, as a generic term, the rather high pick, heavy cotton goods on the order of beaverteen, corduroy, doeskin, moleskin and velveteen.

GOTON means cotton to the Egyptians. (See *Arabia — Quoton*).

MOMMY CLOTH is the name given to the linen or cotton fabric used to encase dead persons in Egypt. It may be seen in museums throughout the world. The yarn used was very fine in diameter and high in yarn count. The fabric was plain weave and left unbleached.

from ENGLAND

Next to France, England has provided more fabrics and fabric names than any other country. Many of these are very old in origin and practically all of them are still in use today as staples or as fancies.

AXMINSTER is a popular, low-priced carpeting which was first made in Acksminster. Not a yard of it, however, has been made there for many years but there are several other world carpet centers that make this floor covering. The number of colors that may be used and the intracacy of design, plus the economic possibilities in the use of the pile yarn, make Axminster the largest selling type of carpeting today.

BEDFORD CORD, one of the best fabrics made today, was first made in Bedford, England. It is also claimed by New Bedford, Massachusetts, where it was made as early as 1845. The fabric is a simulation of the pile cloth corduroy, which originated in France (the *cord-du-roi,* cord of the king) — during the 17th Century. It was first made in worsted yarn, but cotton and woolen fabrics of this name are also popular. Much of the material sold today as piqué is in reality Bedford cord and the warp-effect construction is still used. It is ideal for riding habits, uniforms, slacks and casual clothes.

BLANKET received its name from a combination of *blanc,* the French for white or undyed, and *kett,* the Anglo Saxon word for covering; hence, a white or undyed covering. There is also the legend that the fabric was introduced in England about 600 years ago by Thomas Blanquette, a Flemish textile worker who settled there. The word, however, has come to mean any warm, heavy, bed covering.

CLAY WORSTED, which is also known as Chain Twill, since the fabric is made with a 3-up and 3-down twill and gives a sort of chain surface effect to the goods, is named for its originator, J. T. Clay of Rastrick, Yorkshire, England. This cassimere-type cloth has been made for about 100 years in England and in this country.

CORONATION CLOTH made its debut in 1901 when Edward VII was crowned king of England. The fabric is a full mixture suiting in red, blue and black, and made of wool.

CRAVENETTE signifies waterproofed fabrics. The first of this type of goods was introduced by the inventor, Thomas Craven, Bradford, England. It is now a generic term signifying cloth that repels rain.

DOILIE is a contraction of the name *Doyley,* a linen merchant of London who brought out this linen napery material 1707-1714.

FLANNEL, a low textured, soft woolen goods received its name from the Welsh term *gwlamen* which implies *allied with wool.* The English contracted the term into *flannen* and then to *flannel.* Flannel is now made from other fibers as well as wool for specific purposes.

HARRIS TWEED, one of the oldest hand woven fabrics in current use, was originally produced on the islands of Harris and Lewis and dyed by the islanders for their own apparel. It is known to have existed for at least 300 years and was originally produced from local hand-spun and hand-woven wool. It was first introduced to the mainland of Great Britain about 100 years ago, and the first registration of a trademark occurred in 1908.

HENRIETTA, although not popular at present, has had its waves of popularity in the women's and misses' dress trade in days gone by. This soft, lustrous dressgoods was first made with silk warp and high grade worsted filling with a 1-up and 2-down twill weave. It was named for Henrietta Maria, Queen and Consort of Charles I (1625-1649).

JERSEY, either woven or knitted, first appeared on the English Channel island of that name. First used by fishermen, the back of the goods was often napped to provide extra warmth to the wearer. The jersey of today is much different from the original fabric.

KERSEY, a heavy, face-finished, conventional and popular overcoating given a high satin-like finish, was first made in the woolen goods center of that name in England. Kersey, melton, beaver and broadcloth are the four most popular face-finished overcoating fabrics of today.

LINSEY-WOOLSEY, often mentioned in Early American writings, was any material made with varying amounts of linen and wool in it.

LINTON TWEED, a distinctive range of tweed fabrics used for summer and winter coatings and for women's ensembles, is a product of Linton Tweeds, Ltd., Carlisle, England. Made for a great many years, the fabric weight runs from eight to eighteen ounces per yard with most of the cloth averaging twelve to fourteen ounces. It is known for extreme softness, wide variance in design and an appealing hand.

MELTON, closely allied with kersey, received its name from the town of this name. The cloth is fulled the most and has the shortest nap when compared with its related fabrics . . . beaver, kersey and broadcloth.

MERCERIZATION was discovered by John Mercer in 1849. It is one of the greatest textile phenomena of all time, and a boon to the finishing of cotton fabrics. Cotton yarn and fabric, because of this accidental discovery, shows a silken-like, permanent luster that lasts for the life of the fabric; the cloth, so treated, becomes stronger. Only about seven-tenths as much dyestuff is needed to dye mercerized goods as compared with dyeing of non-mercerized fabrics. Done in a cold bath of caustic soda, at a strength of about 25 to 45 degrees, Twaddle thermometer, mercerizing can be performed in an ordinary room temperature. Surprisingly enough, John Mercer was a calico dyer and interested chiefly in the affinities of dyestuff for fabric and not in fabric development.

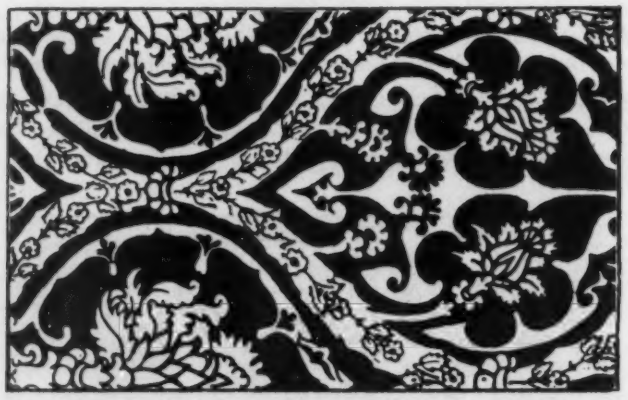
NORFOLK SUITING, at one time very popular in this country for suits with pleats and belted effect, came into being in the English county of that name.

OXFORD is named for the university city and was first produced by Flemish weavers who had migrated to England at the time of the Edict of Nantes, 1685. The fabric simulates a type of basket weave made possible by the bulky, rounded or flat filling used in the goods and the fine diameter of the warp yarn. The word also implies grey mixtures used in woolen and worsted suitings today.

TATTERSALL, a cloth that has cycles of popularity, is a rather gaudy checked or block-effect material whose name comes from the famous horse auction rooms of London owned by Tattersall. It is believed that the ideas for the cloth were taken from the horse blankets which were usually made with some checks.

WORSTED goes back to the day of William the Conqueror. The story goes that, when he came to Britain, he noted that the peasants were manipulating woolen fibers with a type of card or comb to work the fibers into a sliver and slubbing form so that they might be hand-spun into a yarn. William became much interested in the work and, not knowing what to call the task being done, and, since he had worsted the people by conquest, he called the area *Worsted*. In due time, the finished yarn as well was given this name. The village of Worsted where he is supposed to have observed the carding and combing is in Norfolk County. About 1340, fabric of this name was being made in Suffolk County, England. Worsted fabric, as it is known today, did not become a winner in the trade until the 1890's.

YARD is a 36-inch measure in America, while the English yard is a standard established by the government, indicated by two marks on a metal rod embedded in the masonry of the House of Parliament in London. The American yard, which is 1/100,000 of an inch longer than the English yard, is not fixed by government standards. The foot of today, which measures 12 inches, is supposed to have been the length of the foot of James I, 1603-1625.



from FRANCE

The history of fabrics with French names is by far the most interesting of all. Much of the credit belongs to Francis I (1515-1547), the Father of the Silk Industry. Francis lived much of his early life in the province of Savoy, where he had ample opportunity to ponder the possibilities of taking the silk industry to France when he became king. Obsessed with the desire to aid his country and observing the lavish mode of living among the affluent Italians who produced and owned beautiful silk fabrics of many types, he noted the intricate skills shown by Italian weavers and he set up his plans to make silk and France synonymous.

It was Francis who revived the denarii (denier) *as a weight-length measurement when he applied its use to measure silk filament. Of small value and originally made of silver, the true denier was about the size of a fingernail. After Caesar, the denier lapsed into oblivion and was not heard of again until Francis brought the silk industry to France and made Lyons and Paris, respectively, the silk manufacturing and fashion centers of the world. Today, all filament yarn is referred to in terms of denier . . . silk, acetate, rayon, nylon, Orlon and the rest of the filament and staple stocks.*

The denier, so important to the textile industry for the past four centuries, and a true length-weight measurement, is specifically one gram per 9,000 meters of yarn. Thus, if 9,000 meters weigh 100 grams the yarn is known as a 100-denier yarn. Consequently, the higher the number in the denier size, the coarser in diameter is the yarn.

Because of the close connection between yarns and fabrics made by denier counts, a new method is now being used in France to figure the size of filament yarn. The yarn numbering, so important in all textile materials, is based on the weight of 1,000 meters-unit per kilogram. Thus, a 60s yarn would have 60,000 meters per kilogram, which is 2.2 pounds. This method is meeting with approval on the Continent and it may spell the demise of the denier system of figuring yarns and fabrics made from denier yarn counts. Only time will tell as to the future of denier; but it has lasted well over 2,000 years and may continue indefinitely.

There are about 75 fabrics, most of which are still in use today, that owe their origin, use and popularity to Francis I.

ARMURE is named for the weaves that show small, interlaced designs of chain armor which was popular for military equipment during the Crusades. The name is still used for types of metallic fabric for evening wear, hand bags and other accessories.

BATISTE, named for Jean Batiste, a French weaver who lived in Cambrai and first produced the cloth, is noted for its fine yarn, high texture and softness. It is made with cotton or linen yarn.

BEIGE, a popular shade, is the French term for natural or neutral color.

BOMBAZINE probably first produced by the Greeks, comes from the Grecian word for silkworm. This light weight silk mourning cloth, still made in France, became popular there about 400 years ago.

BOUCLE is a curled-face fabric which received its name from the French verb *boucler*, which means to curl or to buckle into ringlets.

BOURETTE derives its name from the French verb *bouretter*, which means hairy in appearance. The material has a hairy effect on the surface, since the yarn is interspersed with nubs.

BROCADE comes from the French verb *brocader*, meaning to ornament. Brocade is a very rich looking, expensive, decorative fabric.

BROCATELLE is on the order of brocade. The original fabric featured raised figures made of woolen yarn on a background of silk. It is still a staple decorative and upholstery material.

BROCHE, another name for a hairline or pinstripe fabric, implies that the single color of the goods is broken up and decorated by a stripe.

CAMBRIC is a very fine, thin white cloth made of cotton or linen of which it has been stated that the *greatest thread was not even the size of the smallest hair*. The old Flemish name for cambric was *Kameryk*.

CANICHE comes from the French word for dog and implies a fabric made with a curly face finish. Present day Poodle Cloth is a development of Caniche.

CHAMBRAY, one of the most popular cotton staples, originated in Cambrai. It is made of white cotton warp and colored filling and with certain variations such as stripes and novelty effects.

CHENILLE is the French word for caterpillar and it was used chiefly as trimming on gowns when first made. Fabric of this name today is characterized by a fluffy or fuzzy face. The name also is used for the well-known Chenille rug or carpet.

CHEVRON is made from broken twill and herringbone weaves to give a chevron effect such as seen on military uniforms. The patterns have waves of popularity in men's wear suitings and coatings.

CHIFFON is from the French word denoting a rag of the flimsy type and has been used to signify veiling and sheer fabrics of diaphanous type known for high yarn twist to give strength.

CORDUROY made its debut during the reigns of the Kings Louis' of France and means *cord of the king*, a fabric much used by the outdoor servants and lackeys in the halcyon days of France. Noted for its rugged construction and good wear, the material is very popular at present. (See ENGLAND: *Bedford Cord.*)

COUPURE comes from the French verb which means to cut through. The term is applied to pile fabrics of several types which have been cut and clipped to give a desired effect.

CREPE signifies crimping or creping by means of a hot iron. The cloth is always a staple in the trade and there are many types, most of which are made in the so-called crepe weave which is a variation of the plain weave. Yarn twist is also important in crepe materials since it helps to provide the crepe, granite or pebbled effect for which these fabrics are noted.

CRETONNE is named for a village in Normandy. The fabric is made from Osnaburg grey goods, is strong, unglazed in finish and may be plain or printed on one or both sides.

DELAINE in French means *of wool*. Wool by this name signifies that the stock is of the merino type, the finest wool obtained anywhere in the world. Delaine wool, in this country, originates in Ohio.

DENIM was first made in de Nimes or Nimes. This rugged, compact cotton fabric gives excellent service and is popular today for all types of garments from work clothing to evening wear. It is made with right-hand or left-hand twill constructions, usually in the latter weave, which affords quick recognition from the face of the fabric.

DRAP D'ETE means cloth of summer and is a lightweight fabric of several types on the order of tropical worsteds or blended fabrics comparable with tropicals. It is used chiefly by the clergy for warm weather wear.

EPINGLE, from the word for pin, was developed by the French who made it a distinctive fabric about four centuries ago. First made of silk yarn and now made of acetate, rayon or worsted, this fine, corded dressgoods with alternating large and small ribs gives an effect of pinpoints in its pebbled effect which is aided by the use of contrasting or harmonizing yarns.

EPONGE is the French word for sponge. The term is applied to a group of cloths which are soft or spongy in feel and used to some extent for women's dressgoods. Fabrics of this name are usually rather porous in texture which makes them ideal for summer wear.

ETAMINE is a bolting fabric or sifting cloth, whose name implies a dressgoods material which has porous areas in it, such as noted in leno or doup fabrics, mock leno cloths and *cloth that breathes*, a term popular in advertising goods of this character. Etamine, comparable with eponge, is usually lighter in weight.

FOULARD means silk handkerchief and the fabric still serves this purpose as well as being popular in the manufacture of neckwear, dressgoods and scarves.

FOULE is the term given to fabrics which have been shrunken in the finishing operations. The verb form means to full or to shrink; hence the English term *fuller*, one who fulls or shrinks textile fabric.

FRIEZE is from the verb *friser*, which means to curl. The cloth has a curled face effect and is much used in the upholstery trade, since it has an intricate pile construction which affords good wear on furniture. Fabric of the same name is popular at times for women's coatings.

GAUFRE means puffed or waffled and is suggestive of honeycomb or waffle material that is in demand for women's summer dressgoods of cotton and man-made yarns.

GRENADINE, while of Italian and Spanish origin, was developed on a large scale by the French weavers in Lyons. Originally the meaning implied an outer covering, cape or cloak made on bell-shaped lines. Present-day grenadine is a dress fabric made with open gauze weave from hard twisted yarn. Stripes and checks may be obtained by cramming the yarn in some places and skipping reed dents in other areas to give the gauzy effect. It is made from most of the textile fibers.

GROSGRAIN originated in the Middle Ages and gained popularity in France when silk yarn was used to make the fabric noted for its pronounced filling-rib effect. The term implies a heavy or thick grain line in the cross-wise direction of the goods; grosgrain is said to be *bengcline cut to ribbon width.*

HONEYCOMB, also called waffle cloth, received its name from the French *nid d'abeille*, a bee's nest; hence its application to the raised portions observed in the fabric. The high point on the one side of the honeycomb is the low point on the reverse of the material.

JACONET is a thin cotton fabric somewhat heavier than cambric; the face of the material is given a glazing treatment to produce high luster. East Indian in origin, the French developed the material by making stripe and check motifs in the goods, an improvement over the original fabric.

JACQUARD is the name given to fabrics in which elaborate motifs are woven into such goods as brocades, brocatelles, damasks, tapestries, napery fabrics, neckwear, dressgoods and so on. It is named for the inventor of the loom which weaves the cloth — Joseph Jean Marie Jacquard (1752-1834), who invented and perfected these looms between the years of 1801-1810. Jacquard, considered one of the greatest benefactors to the textile world of all time, was a friend of Napoleon and the latter pensioned him for his contributions to French textiles.

JEAN is a twill woven cotton with an undressed finish, a lining cloth first made in Caen. It is made with a three-harness twill in warp-effect or filling-effect, some right-hand twill and some left-hand in direction. Both types are popular staples in the trade and are usually dyed in solid shades with a wide variance in finish with respect to luster and surface effect.

LAWN comes from the city of Laon, a few miles from the textile center of Rheims. Originally used for garments worn by the clergy, present day lawn is a lightweight cotton or linen fabric of the better grade, usually made of combed cotton yarn.

LENO, also known as doup-woven cloth, is known for its open-work face which resembles lace. The term is applied to fabrics which are constructed on the principle of cross-weaving, in which two sets of harnesses — standard and skeleton — are used to make the warp ends cross each other in weaving. Marquisette is an example of doup-woven fabric. This method of weaving is supposed to have originated in or near Laon and the material, in some circles, has been called a *cross-woven lawn* when yarns such as those used to make lawn are used.

LISLE is a fine, hard-twisted cotton or linen yarn or thread used in hosiery. Lisle was the former name for the textile center of Lille.

LONGCLOTH is a contraction of lawn and is thought to have been the first fabric made in a definite length in France; the original length is supposed to have been 36 yards. Made with carded or combed yarns today, the material belongs in the cambric-nainsook group of cottons, but it is more closely woven and somewhat heavier that either of these.

LOUISINE was named for Louis XIV. It is a distinctive silk cloth with twice as many ends as picks in the construction, since each pick crosses the warp ends at once to form a small rib effect.

MARSEILLES is a popular cotton summer bed covering named for this French city. It comes in several widths and weights and is bleached to white or enhanced by the use of yarn-dyeing on white.

MATELASSE is a bed covering and dressgoods fabric recognized by its padded, puffed or pouched face effect which derives its name from the French verb, matelasser, which means to pad or to stuff.

MISTRAL, on the order of etamine, is made with nubbed, uneven yarn to give a wavy effect in the cloth and comes from the French term for strong northwest wind.

Origin of Textile Fabrics . . . continued

MOIRE, also known as watermarked, received its name from the verb *morrer*, to wave. First seen on silk or mohair fabrics, the effect is also given to cottons, acetates, rayons and comparable materials to enhance the surface effect.

MONTAGNAC is the registered trademark of E. de Montagnac et Fils, of Sedan. Made for a great many years, this luxury cloth is composed of wool and cashmere, the latter adding to its appearance, feel and beauty. The silken-like feel of the goods is one of the chief assets of this smart, dressy overcoating which has a weight of 36 ounces per yard. The name comes from *mountain-wear*, for which the cloth is ideally suited.

MOREEN is another derivation of the verb *morrer*, Mohair, silk, cotton, rayon and acetate fabrics are sometimes sold under this name when the watermark has been applied to poplin-type fabrics.

OMBRE means shaded in French, and fabrics with stripes of various colorings are often sold under this name.

ONDULE is a contraction from the French for waved or shaded effects. The finish is brought about by causing the warp ends, in a series of groups, to be forced alternately by the ondulé reed to the right and then to the left.

ORGANDY, a plain, figured or dyed, thin muslin-type fabric noted for its stiff finish, received its name from the French *organdi*, a word used originally to mean book muslin.

ORLEANS is made of cotton warp and bright wool filling and first appeared in this French city. Alpaca and mohair are present day fabrics of this type.

PANNE means to flatten and the term is linked with *peluche*, the French for plush, in many instances. Used also with velvet, the word signifies that the fabric has had the pile effect pressed flat in one direction; hence, panne velvet.

PEAU DE CYGNE was first made in France and because of its soft, appealing feel was given this name which means skin of the swan.

PEAU DE SOIE means skin of silk and the fabric was a staple until silk cloths began to decline with the beginning of World War II.

PIQUE comes from the French and refers to *pike* or *that which pierces*. This popular cord, rib or wale fabric achieves its effect in the filling or the crosswise direction of the goods, from selvage to selvage. Today, however, the term is applied to materials with wales that run in the warp or vertical direction in the goods as well. Piqué is made with two warps and two fillings and may also have stuffer threads in addition to the binder threads used to hold the cords in place. Birdseye Piqué, Waffle Piqué and Bedford Cord are kindred fabrics.

PLUMETIS is a lightweight fabric made of cotton or wool which shows a raised motif on a plain background to give a feathered effect.

PLUSH comes from the word *peluche* which means shaggy. Pile fabrics with a pile of one-eighth of an inch or higher are known as plush; when the pile is less than this height the cloth is velvet or velveteen.

POIRET TWILL is named for Paul Poiret, one of the most popular couturiers of Paris in the 1920's. Still a staple fabric for women's worsted suitings of the better type, it is made in a steep twill weave and has twice as many ends as picks per inch in the cloth texture.

POPLIN has been made for many centuries and its name comes from the Papacy. The Italians made the fabric, *papalino*, in the famous, walled medieval city of Avignon. This silk or worsted fabric was used for church vestments and the French called it *papeline*. The contraction, *popli*, followed, and around 1800 the English named it *poplin* and used cotton to make the material.

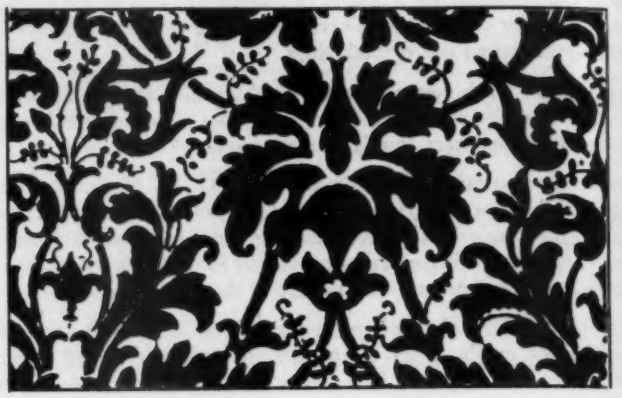
SANGLIER means wild boar since this fabric made of worsted and mohair or other hair fibers closely resembles the wiry, shaggy bristles and hair of this animal. Compact texture is important in weaving to obtain the effect.

SCHAPPE is a type of waste silk which received its name from *hacher*, which means to chop or to cut up. Schappe silk is cut into short lengths and spun into yarn on the spun silk method of spinning; it can also be mixed or blended with other major fibers. This silk has good strength but poor, irregular luster.

SOLEIL is the French for sun and many allied types of silk fabrics are given this name since they show bright satin-face effects which simulate the rays of the sun.

SOUFFLE means puffed, and the large designs seen in crepon and other cloths which are made with a raised or puffed motif are thus named.

SUEDE is the French way of saying Sweden. Fabric of this type is closely woven or knitted to produce a very soft, appealing nap on the goods; it simulates leather of this name.



TAMISE is a close-mesh fabric first made of silk and wool and now made of man-made yarns. The name comes from the French word for sieve, since the fabric is of the diaphanous type, such as marquisette.

TERRY CLOTH received its name from the verb *tirer*, meaning to pull out. Turkish toweling is the original fabric and the pile is made so that the loops are drawn through a foundation and remain uncut. The pile effect may be on one or both sides.

TOWEL is derived from the word *touaille*, a linen fabric. The cloth of today is still made from linen, but much cotton toweling is also made.

TRICOT means to knit and the fabric can be woven or knitted according to the demands of fashion. Fine, vertical lines are seen on the face, while crosswise ribs are noted on the back of the material.

TULLE, first made in Toul, is a fine, soft, machine-made net. Hexagonal meshes are a feature of the material which is used for veils and bridal gowns. Silk and nylon fabric of this type, despite its open-mesh construction, is strong, rugged and gives excellent service.

VELOUR is the French term for velvet. The term today has a double meaning — it may be a cut pile cotton fabric on the order of cotton velvet or a material with a raised or napped finish. Velour is also used broadly to imply pile fabrics in general.

from GERMANY

BUNTING comes from the German *bunt*, and means variegated or gay colored, a characteristic of bunting cloth.

FELT is derived from the rolling and pressing of a pulpy mass of wool fibers, hair fibers or fur fibers into a mat-like form. The term means to mix and press into shape, a contraction of the German *falzen*. Felt is said to have been known to wandering tribes who evolved the art of making it long before spinning and weaving were invented. The patron saint of the felt industry is St. Feutre of Caen, France. While on long trips, he placed wool in his sandals to relieve foot pain. He noticed that the serrations or scales peculiar only to wool fibers, aided by heat, pressure and moisture, interlocked and formed a matted layer of wool fabric. Thus, felt, as we know it today, was born.

HUCKABACK, also called *huck*, is a strong cloth of linen or cotton. The name comes from the German *hukkebak*, meaning pedlar's wares.

OSNABURG, the base fabric from which cretonne is made, is named for this city in Germany.

SAXONY is a broad term today, but was first applied to the merino wool of Germany, one of the best wools obtainable anywhere. It also is the name for a quality knitting yarn and a luxury type men's overcoating

fabric. Named for the province in Germany, Saxony is a popular name to designate fabrics such as Saxony flannel, Saxony carpet, etc.

WOOL comes from *wolle*, the German word for wool fleece. Incidentally, Vilna on the Baltic Sea received its name several centuries ago because it grew as a center and clearing house for shipments of wool.

from GREECE

DIMITY comes from the word *dimitos*, meaning a double thread. This lightweight staple cotton comes in plain construction or may be made in a variation of the plain weave in which bars, cords or stripes are used to add to the appearance.

EOLIENNE takes its name from the Greek *Aeolus*, the God of the Winds. The cloth is a lightweight zephyr fabric and may be classed as a very fine poplin. First made of silk warp and worsted filling, it is now made with acetate, rayon or cotton.

GALATEA is a left-hand cotton twill fabric used in children's sailor suits and play clothes, an old standby for many years. The name comes from the sea nymph of Greek mythology.

ZEPHYR originally was a lightweight worsted yarn of good quality. Fabric made of the yarn was also known as zephyr. Today, many lightweight cottons and man-made fabrics are advertised as zephyr to attract attention to the sheerness or lightness of the material. The name is from *Zephyrus*, implying West Wind.

from INDIA

BANDANNA means to tie or to bind. Cloth of this name was colored by the Indian natives by dip dyeing or by tie dyeing to produce a mottled effect. The fabric, at present, is usually dyed by the resist method or the discharge method of printing, while some of the goods, in accordance with the motif, is direct printed. Bandanna prints may or may not be clear and clean in pattern and looks.

BENGAL STRIPES, named for the province in India, are distinctive stripe effects in which several colors are observed. Neckties, ribbons, dressgoods and regimental stripes are some examples of these multicolored stripe effects.

BENGALINE was first made in India by the use of silk yarn in the warp and cotton yarn for the cross-rib effect to produce the cord. It is now made from all major textile fibers.

CALICO, one of the oldest staple fabrics known to mankind, was first made in Calicut, the seaport town in the southwest area of Madras province in India.

CASHMERE is the name for several soft-feeling fabrics which have the texture or hand of the fleece of the Cashmere (Kashmir) goats found in the vales of the Himalaya Mountains. Incidentally, many fabrics of this and similar names have little or none of the valuable goat hair in them. It also means the fine, soft, downy hair fibers which grow as an undercoat on cashmere goats.

CHINTZ comes from the word meaning spotted. This cloth was colored by staining or painting the motif onto the goods. The fabrics were made to give a multicolored effect that might be bizarre or conservative, characteristics still true of this plain woven cotton cloth which varies considerably in texture, weight and price.

CHUDAH, a plain weave cotton, is named for the Indian plant noted for its brilliant green colorings. The color today is popularly known as Kelly Green, a vivid shade.

CHALLIS comes from a word meaning soft to the touch. The fabric is made from cotton or worsted and is particularly popular when made from the latter. Worsted challis is one of the very few animal fiber cloths that is printed by the direct, resist or discharge methods.

COTTON was first known in India about 3,000 B.C., and was considered very rare and precious. In the Seventh Century, the plant was classed as a garden flower. Cotton is referred to as King in America today, the universal textile fiber.

DORIAN was originally a striped muslin first made in India, and is still a staple in many world centers.

INDIAN LAWN, also known as Indian linen at times, has been made in India for over 4,000 years. Fabrics by this name are seen in museums and are noted for their particularly fine yarn counts, evenness of weaving and zephyr weight.

KHAKI, known by armed forces the world over, means dust-colored.

MADRAS, one of the most popular of shirting fabrics, originated in this Indian province. The fabrics were made with the varied stripe effects which make the cloth ideal for shirtings.

MULL means soft or pliable, and the cloth of this name is a type of lightweight muslin, now overshadowed by lawn, cambric and voile.

from IRELAND

BALBRIGGAN in Ireland is where the first bleached hosiery was made. Also used for other purposes today, the fabric is a lightweight, plain stitch knitted cotton cloth with a napped back.

BREECHES comes from the word *briges*, a loose, trouser-like garment worn by the peasant folk of Ireland, which was a forerunner of the knickers of a later age.

from ITALY

CRASH comes from the Latin *crassus* and means coarse. The rough, irregular surface caused by the use of thick, uneven yarns is typical of the material of today. Osnaburg is the grey goods for crash made of cotton; other types are of acetate or rayon staple stock, and linen.

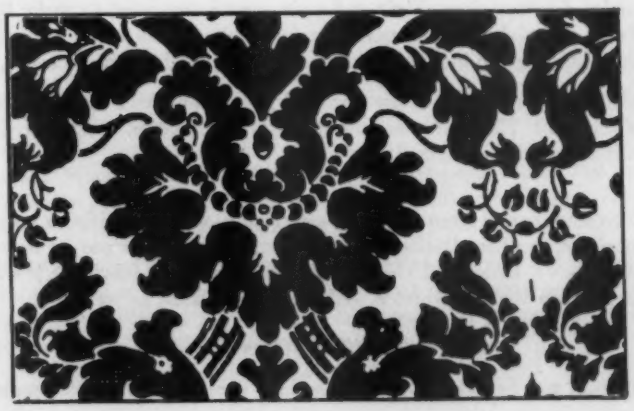
DOUPPIONI, when applied to silk cocoons, implies that two or more of them have nested together so that when they have been reeled, an irregular, coarse, double filament results. The Italians have been very adept in the manipulation of this yarn which can be used in present-day fabrics such as nankeen, pongee, shantung and other cloths which use irregular, slub-type yarn. Douppioni silk yarn is now simulated in acetate and rayon yarns made from the staple fibers.

FLORENTINE TWILL received its name from this Italian city. It was first made as a silk fabric for dressgoods with an eight-end satin weave in a twill effect arrangement. Plain, figured or striped effects were used to give contrast in the material which, in addition to its use in dressgoods, found favor in vestments and vesting fabrics. Cotton warp and mohair filling were used in the lower qualities.

ITALIAN CLOTH, a broad term and one which signifies a smooth lining material, was known during the Middle Ages. It is made of all cotton with a 5-shaft filling-effect weave in either a satin or twill weave. Usually piece-dyed black or brown, the fabric is now made of acetate or rayon yarn, in addition to a cotton cloth for which there is still demand in the apparel trade.

LACE comes from the Latin *loquens*, which means to make a knot, snare or noose and was corrupted into the present term. Real or handmade lace is produced either by a needle, when it is known as point or needlepoint lace, or on a pillow with bobbins or pins, as in the case of bobbin or pillow lace, or, at times, by crocheting or by knotting or tatting. Machine-made lace manipulates the threads to produce the effects of real lace.

LINEN is from the Latin *linum*, and refers broadly to any yarn or fabric made from flax fibers. Italy was known for its linens during the Renaissance since much had been learned of the manipulation of flax into linen fabric from extant linen fabrics made in Egypt.



Origin of Textile Fabrics . . . continued

MESSALINE was named for the wife of the Emperor Claudius, Messalina. This fine silk fabric was compactly woven and noted for its high sheen. The cloth was made on a 5-end satin weave and had all the characteristics of Peau de Cygne which was made on an 8-shaft weave. Both fabrics were popular in the silk trade from the turn of the century until World War II, when acetate and rayon fabrics replaced them.

MILANESE fabric is known as a warp-loom knit cloth made on the Milanese loom, usually from acetate, nylon, rayon or silk yarns. This very fine fabric is named for the city of Milan.

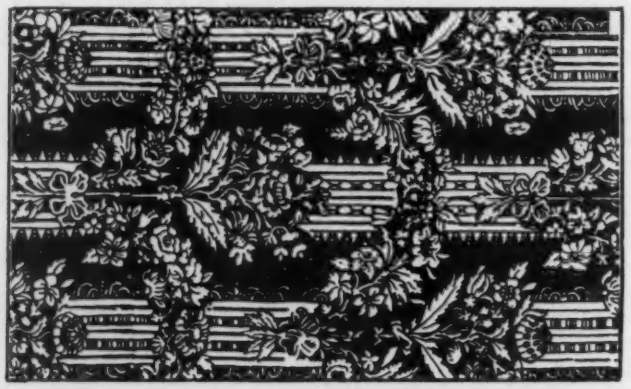
ORGANZINE comes from the Italian and means twisted silk — the term for the silk warp yarn in a material.

SERGE comes from the word *sercia* which means silken; the Spanish term is *xerga*. Originally made in Italy and Spain, the cloth was made with a small twill weave, usually a 2-up and 2-down right hand twill construction. Serge of today is a light-to-medium weight worsted fabric of good texture, even yarn and clear face finish.

SICILIAN was first made on the island of Sicily. Cotton warp and mohair filling were used for this lining fabric which is still popular at present when made from these or other yarn combinations. Another fabric of the same name, used for dressgoods and also made in Sicily, used silk warp and woolen filling in which the rather bulky crosswise threads formed a rib effect in the material.

TARLATAN, first made from linen warp and wool filling, was a coarse, stiff, heavily sized cloth named from *Tarlantana*, a Milanese term for fabrics of this type. It resembles buckram and crinoline.

VELVET was originally made with a short, dense pile woven with silk warp. At present the term is applied to cloths made partly from silk, acetate or rayon and partly of other materials, as well as to goods made entirely of other yarns. Velveteen is a filling-pile fabric and is often confused or mistaken for velvet, a warp-pile effect material. Incidentally corduroy is a filling-pile effect weave cloth. Velvet received its name from *vellute*, which implies a wooly feel to the touch. The use of silk warp and woolen filling improved the hand of the goods, and cloth of this type was made from time to time.



VELVETEEN is a simulation of true velvet and it may be made of acetate, rayon or cotton with a plain weave construction on the back. The cloth may be wax-treated to improve the luster and the finished product may be piece-dyed or printed on a dyed background.

VENETIAN, named for the city of Venice, is a warp-faced sateen which is stronger and heavier than ordinary sateen cloth which is always made of cotton yarn. Eight-end satin weaves are used to make this lining material which closely resembles Italian cloth used in linings. Venetian is given a mercerized or a schreinerized finish for luster.

VOILE is a corruption of the word *vela*, which implies a covering, curtain or sail. This staple is now made of silk, cotton, acetate, nylon, rayon or worsted yarns.

from MALAYA

GINGHAM comes from the word *ging gamp*, which signified a cotton fabric of the East Indies made with stripes, cross-stripes or barred effects — a variegated cloth. Still a most popular fabric, it is now made from woolen, worsted and man-made yarns as well.

from MESOPOTAMIA

MUSLIN was first made in this homeland area of the Turkish peoples. *Mosul* or *muslin* is now a generic term which covers a host of cotton cloths, from sheers to heavy sheetings. It is also a pure starched or back-filled finish material with a dull, thready or clothy effect.

from PALESTINE

GAUZE, first made as a veiling or netting, was given to the world by the city of Gaza. The present-day cloth is of open mesh, loose construction, and plain or doup weaves are resorted to in order to make the goods. Cheesecloth and tobacco cloth are examples of gauze.

from PANAMA

PANAMA is the name sometimes given to small basket weaves such as a 2-2, 3-3, 4-4. Some embroidery canvas, a cloth made for many years on hand looms in Panama and other Central American countries, is known by this term. The name is also given to the straw plaiting used by the makers of Panama hats which, curiously enough, are not made in Panama but in Ecuador.

from PERSIA-IRAN

PERCALE comes from the word *parfalah*, which described a cotton cloth made in Persia for many centuries noted for its fine texture, smooth finish and small printed motif. This staple is probably the most popular cotton print goods on the market today. Sheeting of percale is also exceedingly popular at present.

SEERSUCKER comes from the word *shirushakar*, a puckered or blistered surface. The fabric is made with set stripes alternating with plain or crepe ground weaves. The base ends in the fabric are under ordinary loom tension, while the ends that give the puckered effect are woven with a slack tension. Another method of obtaining the effect is to print the cloth in stripes with a preparation that will resist the action of caustic soda. Thus, when the goods are passed through the concentrated caustic soda solution, the imprinted stripe areas will shrink to give the appearance of puckered or blistered stripes.

TAFFETA is one of the oldest fabrics known to man; originally made of silk and noted for its smooth surface, even texture and slight crosswise rib, the Persians called it *taftan*. The plain weave used to make it is still, in some circles, called the tabby weave. Taffeta was being made in the 14th century in England, and France was making the material prior to this time and called it taffetas. Its first use was for lining rich, luxurious mantles; later it was produced for dresses and was worn in court circles. The goods are now made from about all of the major textile fibers. Much of the present-day taffeta is moiréd.

from RUSSIA

ASTRAKHAN, spelled in a number of ways, is a curly-faced pile fabric, knitted or woven, to simulate the pelt of Persian sheep of this name, a grade of Karakul-type lambskins.

BUCKRAM received its name from Bokhara, in Southern Russia, where it was first made. It is a stiff, firmly starched cotton fabric such as scrim, cheesecloth or tobacco cloth, but heavier than crinoline. It is used for belt and skirt lining, in the millinery trade and in bookbinding.

CARACUL is merely one of the ways of spelling Karakul, a broadtail sheep of unknown origin found in Bokhara in Southern Russia. The glossy, black fur is taken from the young lambs known as Persian lamb, Broadtail, Astrakhan, Karakul. Fabric of this name is a simulation of the fur and may be knitted or woven.

MOSCOW is a heavy, stiff, boardy, cumbersome overcoating peculiar to Russia and is a bulky frieze fabric that is most difficult to use in cut-fit-trim. It is named for this Russian city.

SEBASTOPOL is a twill-faced, heavy overcoating which originated in this well-known Crimean city.

from SCOTLAND

BANNOCKBURN was first made as a cheviot-type material on a 2-up and 2-down twill weave in which there was an alternate arrangement of two-ply and single-ply yarns in both warp and filling, with the ply yarn being made of single yarns of different colors twisted together to provide a mottled effect in the goods. Always a staple in the trade, the fabric at times is a leader in both men's wear and women's wear suiting and light topcoating. It is named for the famous battle fought in June, 1314 when the Scots defeated the English.

CHEVIOT is a popular cloth of the homespun-tweed group and is named for the sheep that graze in the Cheviot Hills which separate England from Scotland. This loosely woven, shaggy surface-effect tweed is now made in a wide range of quality, weight, texture and feel. Most of the fabric is noted, however, for its distinctive feel and it does not necessarily have to be made from Cheviot wool.

MELROSE was first made as a silk and wool dress cloth named for this town on the Tweed River, Scotland. Little of the fabric is seen today.

PAISLEY was first made as a worsted fabric in which scroll motifs were woven into the goods in colors of red to brown. Named for this venerable city in Scotland, the Paisley pattern is a derivation of the Indian pine cone figure. In the Eastern World, the famous cashmere shawls of India, made for many centuries before the Scotch revived the motifs, were often constructed with the pine cone designs.

SCRIM is a low textured cotton which received its name from the fact that the reduced texture in the goods caused the material to become scrimpy or skimpy; hence, the contraction into scrim. It is used for curtains, bunting and buckram. Cheesecloth, when bleached and given a heavy starching, is known as scrim.

SHETLAND is a suiting fabric made wholly or in part from Shetland wool. It was first made on the Shetland Islands off the coast of Scotland and in the northern area of the mainland of this country. Recognized by its raised finish and soft handle, the fabric is ideal for sportscoats, topcoating and men's wear.

TWEED was first made on hand looms in the vicinity of the Tweed river which separates Scotland from England. This very popular suiting and coating material is now made on power looms as well as on hand looms. The latter type is much in demand and commands a good price. Two or more colors feature the goods; and while some of the fabrics are made of plain weave — the homespun weave — most of the product is made on a 2-up and 2-down twill design.

Tweed was originally known as twill cloth and there is a story to the effect that an invoice for the shipment of some of this twill material became wet and was blotted, thereby making it difficult to read the wording. The draper who received the cloth read the term as *tweed* and, thinking it appropriate, since he lived in this area, began to call the fabric by the name of tweed; the name has remained for this distinctive woolen goods.

from SOUTH AMERICA

ALPACA is a long, white or colored smooth hair obtained from the Auchenia paco of South America, found chiefly in the Andes mountains. The original alpaca cloth was made with a cotton warp and alpaca filling for use as a lining material. Other goods which have some content of the fiber are luster dressgoods, silk warp alpaca, alpaca mixtures, mohair linings and sweater fabrics. The term is now used very broadly, even for materials in which none of the fiber is to be found, such as rayon alpaca, for example.

VICUNA provides the finest hair fiber to be found anywhere in the world; it is half as fine as the finest merino wool fiber. It belongs to the camel family and is a native of southern Peru which still protects the animal by law so that it will not become extinct. Found in small flocks in the almost inaccessible mountain areas of Peru, the animals thrive best in an altitude of about 10,000 feet. It is necessary to kill the animal to obtain the fleece and a very limited supply is available at all times. Vicuna cloth sells for $150 a yard and coats made wholly of the fiber have sold for as high as $1,000 a garment.

from SPAIN

BAIZE has been made for several centuries in Spain. It is named for the town of Baza and is a solid-color woven goods used for table and wall coverings.

CHINCHILLA fabric simulates the fur of the animal of this name, a rodent native to Spain as well as to the Andes mountains. The fabric is made from two warps and with two, three or four fillings to obtain a spongy effect in the material. A special rubbing machine is used to obtain a distinctive curly nub effect on the face of the goods.

GABARDINE goes back to the Middle Ages when the Spanish called it *gaberdine*, meaning protection against the elements. The first fabric known as gabardine was a cloak, cassock or mantle which was loose fitting. The cloth of today is firmly woven, clear in finish and has a high texture made possible by the use of steep twill weaves, although some of the cloth is still made with a 45-degree twill angle. Ideal for suiting, slacks and dressgoods, the cloth is now made from practically any or all of the major textile fibers.

GRANADA, also spelled Grenada, was first made in the city of this name in Spain. A five-shaft twill weave of 3-up and 2-down was and still is used to make this black-dyed cotton warp and alpaca, mohair or luster wool filling cloth. It is interesting to note that the weave used in this material is arranged as a filling twill in order to give the effect of a 27-degree weave, one of the reclining twill constructions seen occasionally in the textile trade.

TARTAN comes from the Spanish *tiritana*, a cloth with a small check. The Scottish Highlanders have developed these colored checks into their distinctive clan dress plaids. A twill weave is used to make the plaids and tartans which are used in the manufacture of coats, kilts and shawls.

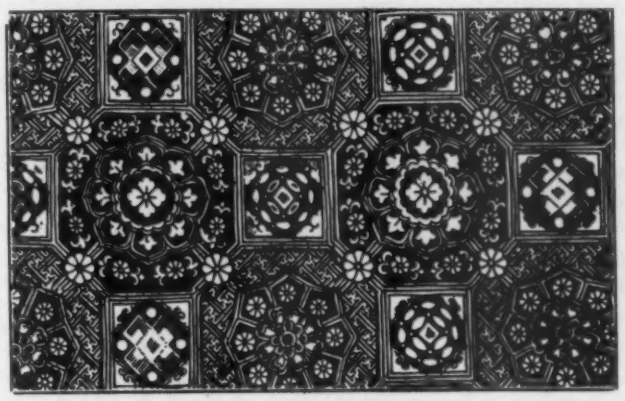
Incidentally, in the true sense of the word, a *tartan* is a pattern or design, while a *plaid* is a blanket-like mantle folded in several ways and joined at the left shoulder by a brooch. The two words *tartan* and *plaid* are often erroneously used interchangeably.

from SWITZERLAND

SWISS; DOTTED SWISS is the permanent finish given to some cotton fabrics, organdy in particular. While a crisp, stiff finish is applied to these sheer cottons, there is a lack of luster which adds to the appearance of the cloths. The method originated in St. Gall.

from TIBET

TIBET fabric has been made for several centuries by the peasants. The cloth is a very heavy, coarse material made from goat hair and wool. There is another fabric of this name on the market today — a coating cloth made with various types of hair fibers and wool for use in the women's coating trade. Tibet shawls are likewise made of hair fibers and much of this fabric is in the luxury class of textile materials.



from TURKEY

OTTOMAN is one of the most popular of cross-ribs in the trade. It was first made over 500 years ago and was constructed in a manner different from the cloth we know by this name today. The original weave was a 12-harness, 75-degree left-hand twill. This produced a flatter rib than that found in faille francaise. Fabric made with this construction eliminated the extra binder warp for the rib effect.

Ottoman in the present market is merely a rib construction with a broad, flat rib definitely pronounced in the cloth. Soleil is the name for the small rib effect; ottoman has a slightly larger and heavier rib, while ottoman cord has ribs of different sizes, arranged in alternating order. All three types, however, are known as Ottoman in the trade today. Ottoman is made from silk, acetate, rayon and cotton. The cord yarns are usually cotton since they do not show on the face or the back of the goods because they are covered by the warp threads.

SULTAN, named for the *first wife* of the Sultan, is a very old textile. It was made of silk warp and wool filling on a twill weave and given a rough finish without any shearing or singeing. It is used for dressgoods, shawls, mantle cloths and cloakings.

END

A NEW INTERFACING MATERIAL

One interesting result of post-war research in Europe is the engineering from natural fibers, without the aid of loom weaving, of an interfacing said to overcome the weaknesses inherent in previous available materials.

NON-WOVEN MATERIALS have been made so far by two methods: One took advantage of the felting properties of certain fibers and the second method used thermoplastic resins as bonding agents. The first method only produces a felt which, when made in thin sheets, will easily disintegrate. Using the second method, the material will always remain thermoplastic, unsuitable for heat and steam pressing and vulnerable to certain organic solvents which are used in the process of dry cleaning.

It has always been the dream of textile technicians and the textile consuming industry to develop, without the necessity of spinning and weaving, a real fabric and not a felt or plastic sheet, a fabric made of a fleece of fibers. Now, for the first time in the history of the textile industry, it is claimed, *a fabric without loom* has been developed with qualities not so far achieved in any conventionally woven textile. The new fabric is offered under the name *Pellon* by the Pellon Corporation, New York, with mills in Lowell, Mass.

Many Years of Research

Several years before the outbreak of Work War II, a group of European scientists, textile engineers and textile chemists began research aimed at creating textiles without spindle and loom. The war brought their efforts to a standstill, but after the war, they were able to resume their search. Being aware of the fact that a non-woven fabric will not have the tensile strength of a woven material, they concentrated primarily on the development of an ideal interfacing, since in a material used in the inside of a garment, no high tensile strength is required for effective functioning.

The combined efforts of these scientists were rewarded with full success. This is how the new interfacing Pellon was born. It consists of a fleece of long staple fibers, distributed in a random position and bonded in the intersections in a permanent manner. The thermoplastic process involved cancels the properties of the bonding agents without affecting the strength or freshness of the fibers. Pellon has a higher porosity and only half the weight of woven interfacings of similar density, adding comfort to the wearer. Since Pellon is unwoven and has no warp or filling, it is the only interfacing made which is isoelastic, having the same elasticity in all directions. The resiliency, crease-resistance and power of recovery of Pellon are astonishing. Tests show an average reading of 3.99 cm., or 0.01 cm. under the maximum possible reading of 4.00 cm.

Fast Drying Feature

A very important characteristic of Pellon, which is washable and dry cleanable, is its unusually fast drying feature. This is very important, especially when used in connection with fabrics of man-made fibers.

Another important factor in measuring the desirability of an interfacing is its ability to resist shrinkage. Pellon does not shrink and therefore does not require sponging. Due to the fact that Pellon has no warp or filling, it can be cut in any direction and will still not ravel — important factors for saving cutting losses and for clean buttonholes.

Due to the structure of a non-woven material it blends easily with outer fabrics, serving not only to provide form or shape but also give better feel to the garment.

The goal of textile scientists is to develop eventually a non-woven material possessing sufficient tensile strength to warrant use as an outer fabric. Such an achievement certainly would revolutionize the textile industry, equaling in importance the invention of the spindle.

Pellon is an important example of the new engineering as a *specific* for interfacing needs, but it may well also be the first step in the development of wonderful loomless fabrics in the years to come.

Thoughts of a Designer

By Frances Van Hall

It is so very common these days to make long trips . . . to cross the equator, to fly over jungles, to gather precious stones in some faraway country . . . that it is impossible to make anyone feel excited about a long journey, especially when it is someone else's. But I am excited about it. That may be childish, but one cannot get away from what is in one's blood.

Even the home-loving and unimaginative have to travel, probably as a relief from the confinement of their country. There is usually a purpose behind it. We are so horribly practical. In my case it is disarmingly obvious . . . inspiration! I am supposed to watch the Indians weave, the Peruvians make silver. But that is not the drawing card. I want to see the coloring of the Andes, sail in a strange little boat on Lake Titicaca and watch the deep, deep blue of the water. I want to see the amazing Inca ruins in Peru. I hope to see a panther slide between the orchids that grow like weeds in Colombia. I want to see the nibbling llamas wander through the cobblestone streets in Cuszco, the Indian markets in Guatemala which always are on churchdays. And it will be wonderful to know that there, going in the market really means the market, with baskets full of colorful produce and not the Chicago market or the competitive haunts of Seventh Avenue. And a color can be admired because it is really brilliant and beautiful, and not because it is the green or blue or yellow that will be the thing for the coming season.

* * *

And wandering further over the Andes into Bolivia, with its tin and silver, and Indians wearing many and heavy woolen skirts and strange yellow hats, high up in La Paz, the world's highest capital. And down over the mountains into Argentina. First Sarta, a Pan American flag stop, where if all goes well my family will meet me — unless my brother is, as he so often is, away on a government mission in some other corner of the world, and has forgotten to let me know. But if need be, for the time he can be a farmer, instead of a diplomat. We will drive in a jeep out to Ampaseachi, the estancia where the major-domo is a Bolivian Indian who has a white coat and has learned to say "yes madam" and "no madam." Where my brother plants tobacco and other things with strange sounding names. Where at 7 A.M. the peon comes with saddled horses for everyone, including my two-and-a-half-year-old niece.

Then down through the enormous country of Argentina to B. A., where one cow to be consumed during one meal is nothing. Where the pampas are endless, and the gauchos can only ride and herd cattle and eat meat and drink maté. Up through Uruguay, the democratic haven of Medieval South America, into the humid, lush jungles of Brazil. And to the rum and the dances of Trinidad and the quaintness of Curaçao, the lazy luxury of the Piscadero Bay Club and the enormous seashells of nearby Bel Air, on the last leg of the trip-home.

Panthers and orchids and Indians, colorful Mexican shirts and Bougainvillia, topazes and the intrigues of the Casa Rosada . . . all these will soon fade away in the hustle and bustle of the markets of New York. Trends will replace traditions; styles, inspiration — too bad but necessary — and fascinating too, in its own pressing and competitive way. But maybe a coloring, a strange and new composition reflected in a future line, may stir the fancy of a buyer or of a consumer who in his daily ride in the I.R.T. or B.M.T. or Jersey bus occasionally wants to let his thoughts roam away from the cozy ginghamy look or the reassurance of the maplewood chest.

* * *

You understand what to do with their influences — none new except maybe the approach. Will you come again in the fall, when I sit here again with a Peruvian rug on the floor, a poncho over my shoulders, no money left in the bank, but silver from Peru and Bolivia in my cupboards? Will you come in November to my South American Fair in the other room? Will you look for the Andes coloring in fabrics in a collection to come?

letters to the editor

APPRECIATION FROM AUSTRALIA

To the Editors:

I recently read with great interest your Number 21 issue of AMERICAN FABRICS, Spring, 1952, in which one of the feature articles is on man-made fibers—Nylon, Dacron, and Orlon.

Here in Australia, due to import restrictions and currency difficulties, we have been somewhat cut off from the latest developments overseas in man-made fibers and, consequently, I find this article most illuminating and educational.

Kenneth Myer
Melbourne, Australia

LATIN AMERICAN DESIGNS

To the Editors:

We have been much interested in and delighted with AMERICAN FABRICS which we show with pride to many people. Your articles on such subjects as Paisley patterns and Tartans have made me think that you might find a rich field in variety of color and pattern in the textiles woven by the Indians of Guatemala. They have a magnificent color sense and, as the patterns, color and even the style of dress changes from district to district, there is a fascinating variation in this nation where the natives still dress almost wholly in materials of their own weaving.

You probably know a lot more about this than I do, but I understand that Tulane University has the best collection of Guatemalan textiles in this country.

Also when we were in Bogota, Colombia last fall we were taken to see a superb collection of pre-Conquest gold work which is exhibited with great elegance and intelligence in the Bank of the Republic. The exhibit is known as *El Palacio de Oro*. The work was done by different tribes, all exquisitely done with skill, taste and imagination. They even have a few of the beautiful, small matrices on which were made the repeated identical motifs used for a necklace, for instance. Some of the designs were quite new to me, although I am no expert; and all of them were enchanting. A good brochure in color was made up at the time of the Pan-American Conference in Bogota when the collection was arranged. But, handsome as it is, the catalog does not even begin to do justice to the size and variety of the collection.

I felt you might be interested and it might be a wonderful example of good neighbor recognition to show this work of the Indians in AMERICAN FABRICS.

Mrs. Richard L. Hanson
New York City

AN EDUCATION IN NEW FIBERS

To the Editors:

As a manufacturer of sportswear who has been in the business for over twenty years, I should like to say that the textile business used to be comparatively simple. I have decided lately that you have to hold an engineer's degree to understand how to buy fabrics today.

Your book has done a wonderful job in the direction of making clear the differences in textiles and telling about the diversified types in current offerings. This is by way of encouraging you to keep on giving as full information as possible whenever a new fiber or yarn or fabric appears on the textile scene. It is good to know that I can now learn about them, feel them, and recognize them, and my deepest thanks to you for helping to educate me.

H. R. Freedman
Los Angeles, Cal.

HELP FOR RETAIL PERSONNEL

To the Editors:

I want to take this opportunity to congratulate your staff on the magnificent job that has been done — and I hope will continue to be done — in connection with the new fibers.

As you know, our prominent department stores use AMERICAN FABRICS extensively in their sales training departments. You have no idea how much simpler our task is when we are able to project to our prospective sales force the information and tips from your stories on new trends in fabrics.

There is so much confusion with the new fibers, to say nothing of the many blends, and your book makes it easier for us to educate and train our people to understand what they are selling and to pass along important information to customers.

Helen R. Herbert
Detroit, Michigan

ANNIVERSARY COVER

To the Editors:

I am surprised that your cover of issue twenty-one, marking your coming of age, passed without wider comment. Many of your readers who recognized the design from the cover of your first issue, must have been delighted to see it again, especially those fortunate ones who, like myself, have a complete file of FABRICS on their shelves.

John Munsell
Westport, Conn.

THE MIRACULOUS NATURAL FIBERS

To the Editors:

I was most interested in your article on Wonder Fiber W in the current issue of AMERICAN FABRICS. This contained many facts about wool, both historical and of present-day science, which are far too little known. If some of the amazing secrets of the structure of wool which science has discovered were common knowledge, we should hear much less about the newly discovered *miracle* fibers, more about the *miraculous* natural fibers.

William K. Plimsoll
Bloomfield, N. J.

TEXTILE HISTORY IN AMERICA

To the Editors:

Your feature article on Worth Street in the current issue makes me wonder if it would be possible for you to give your readers more such articles on the whole story of American textiles and their development to the present day.

What sort of shirts did George Washington wear? Could we have swatches? Or at least of President Truman's? Did the wars affect the quality and volume of American textiles adversely or favorably? Did the Civil War, which was linked with cotton production, result in research and development of new textiles comparable with that resulting from the last war?

If such an article would not strain the research facilities of your staff, it would, I am sure, be welcomed by many readers who, like this reader, value AMERICAN FABRICS as a source of general as well as trade information.

Carvel D. Hatch
Richmond, Va.

INSPIRATION FROM NATURE'S DESIGNS

To the Editors:

I studied with great interest the section on art forms in nature which appeared in the last issue of AMERICAN FABRICS. I am a professor of botany, and I have long been impressed with the variety of aesthetic forms which a trained eye can find among even the most minute sections of plants. To anyone who has the patience to take a strong magnifying glass and examine even small parts of the variety of growths and minute flowers to be found on or around any moss bank, the discovery of hundreds of new design combinations can be infinitely rewarding.

Have you ever thought of running a feature on microscopic designs; that is, designs in plant and animal tissues which a microscope reveals? I personally would be much interested in seeing such a theme given editorial consideration, and I am certain that many readers who share my enthusiasm for nature forms would be gratified. I also feel that much of this material could be of inspirational value to designers . . . particularly those whose emotional leanings are in the direction of abstractions.

John Pettigru
New Orleans, La.

ORIENTAL DESIGN INSPIRATION

To the Editors:

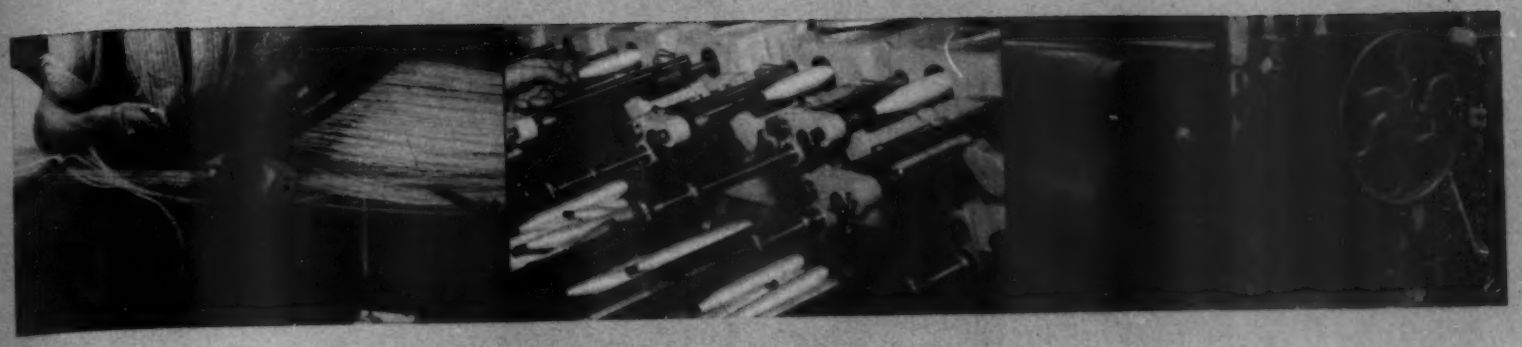
I enjoyed enormously the article on Paisley shawls which appeared in a recent issue of AMERICAN FABRICS. I am a student of design, and I find that the historical features which you present from time to time are of great help to me, both educationally and in terms of useful reference material.

In this connection, I would like to ask a favor. Could you manage to run more articles, sometime soon, on the origin and development of oriental designs? I am particularly interested in the kind of patterns found in Bhokara rugs and other oriental textiles which illustrate the unfolding history of Islamic decorative arts. I would like to know something about the spread of Mogul culture and its impact on the design traditions of the countries affected by expanding waves of Mogul influence.

Helen Arundel
Wichita, Kansas

Correct Fill-ins for Trade Quiz

1. Chatham Manufacturing Company. *2.* United States Rubber. *3.* Celanese Corporation of America. *4.* New Braunfels Textile Mills, Inc. *5.* Lustre Fibres, Inc., (Division of Courtaulds, Ltd.). *6.* Bellman Brook Bleachery Company. *7.* Bates Mfg. Company. *8.* Lankenau Co., Inc. *9.* Joseph Bancroft & Sons Co. *10.* William Jenkins Worth. *11.* M. Lowenstein & Sons. *12.* Stafford Fabrics. *13.* American Textile Co., Inc. *14.* Sea Island Mills, Inc. *15.* Cone Mills, Inc. *16.* Chromspun. *17.* Lorette. *18.* Stonecutter Mills Corp. *19.* The Forstmann Label. *20.* Wellington Sears Company. *21.* Ciba Company, Inc. *22.* Mallinson Fabrics Corp. *23.* Textile Looms, Inc. *24.* Elliott White Springs. *25.* Fieldcrest Mills. *26.* 1924 by Kenneth Lord. *27.* Leslie & Company. *28.* American Bemberg Company. *29.* American Viscose Corporation. *30.* Elizabethton, Tennessee. *31.* Enka, N. C., and Lowland, Tenn. *32.* Vicara. *33.* William Skinner & Sons. *34.* Sanco Piece Dye Works. *35.* Dan River Mills and its Wrinkl-shed and X-2 finishes. *36.* 1790. *37.* Glen Raven Mills. *38.* Nylon is a polyamide fiber, Orlon is a polyacrylonitrile fiber, Dacron is a polyester fiber. *39.* Totarn. *40.* A. D. Juilliard & Co., Inc.



The Story of Linen

How a textile of antiquity and classic tradition has come, after four thousand years, to hold a royal place as one of the most desirable fabrics for the fine apparel and household demands of today's living.

Retting the flax stalks to separate skin and pith from the fiber itself.

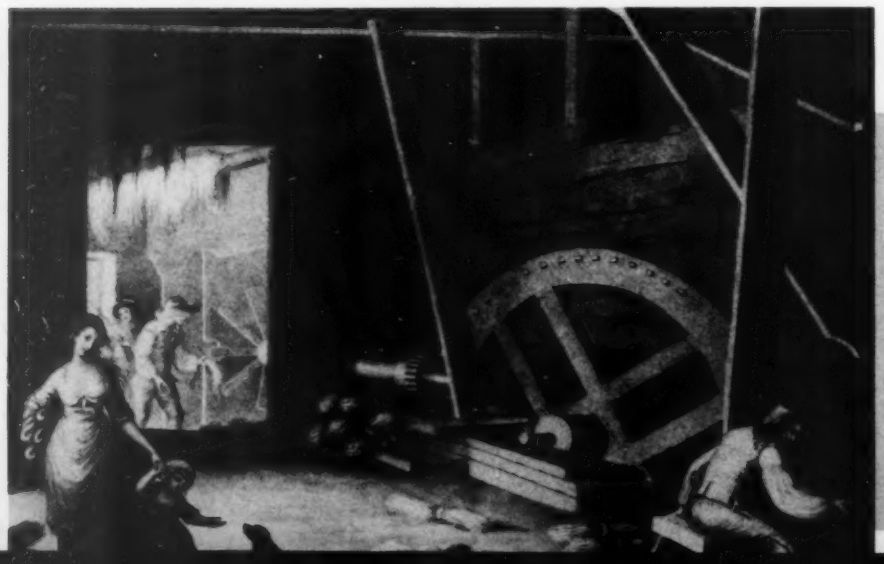
The Story of Linen

How the art of linen manufacture, handed down from the Egyptians, Greeks and Romans, has become the great and flourishing industry of today.

LINEN IS THE OLDEST and most historic of fabrics. Its cultivation was an integral part of the culture of the ancient world, which produced weaves of incredible delicacy and which developed to a remarkable extent the sophisticated arts of dyeing and printing. Its strength, fineness and durability were the qualities which first gave it pre-eminence, and indeed, so resistant were the linen weaves of the Egyptians that shrouds of the pharaohs and nobility, recovered from the mummy cases of early dynastic tombs three to four thousand years old, are still in prime condition.

The Greeks and Romans were also experts in the fine use and manufacture of linen, and the northward expansion of the Roman Empire extended linen culture to Britain during the first centuries of the present era. But with the destruction of imperial Rome linen-making suffered the neglect which was accorded to all established disciplines and crafts. All record of the art is absent from surviving archives of the middle ages. The art of linen-making must, however, have been preserved, in village enterprises, and its techniques transmitted from one generation to another through the strong tradition of local craftsmanship. The term linen, a derivative from the Celtic *llin*, came into use for the product sometime around the 13th Century.

Linen-making as an industry can scarcely be said to have come into existence before the 17th Century, when mechanical innovations and power facilities began to make feasible larger-scale operations than the old cottage looms afforded. In this period its manufacture in Ireland was given a sudden impetus as a result of a strange historical accident. Irish woolen production had then begun to compete seriously with the great woolen industry of England; the British crown, acting on pressure from home producers, placed a prohibitive tariff on the Irish wool imports. But in compensation, Ireland was given a virtual monopoly of the linen market. The economic advantages thus accorded the Irish linen trade were speedily reinforced by craft improvements, introduced around 1685 when the Huguenot *emigrés* settled in Ireland, bringing with them the developed skills and traditions which were part of



Breaking the flax stalks with grooved pulleys and scutching it with revolving wooden blades.

Hackling the flax separates the line, or regular-thread, fibers from the tow.

the established textile commerce of France. Ever since that time the Irish industry has held the leading place in linen manufacture throughout the world.

HOW LINEN IS MADE

THE MANUFACTURE OF LINEN is an orchestration of art, science and craft. It is time-consuming, highly specialized, and demands the optimum of physical conditions. There are no short cuts in the process. Linen-making cannot be rushed, nor can it be undertaken except in areas where soil, water and climatic conditions maintain certain necessary and little varying specifications. And although the industry today is mechanized to a great extent — the greatest that peculiarities of the fiber permit — the conversion of flax to linen is nevertheless largely a hand operation and requires painstaking labor combined with an extraordinary degree of technical assurance. In Ireland the trade of linen-making is for this reason largely a matter of tradition within families; many of the men who wove the linen which covered the warplanes defending England in 1940 were lineal descendants of the men who wove the linen sails for the ships of Sir Francis Drake which destroyed the Spanish Armada in 1588.

Preparing the Raw Material

The processing of linen is distinctly more complex than that of cotton. Cotton is picked and after the seed and fragments of dried bolls are removed at the gin, the fibers are fed to the spinning mill. Linen fibers are not so readily obtained, for the fibers can only be dislodged from their woody core of the flax plant and its protective covering by a process of rotting, or *retting*, as it is known in the trade. This consumes some seven days or more, and it requires special chemically-pure water such as is freely found in the rivers and streams abundant in Ireland.

Retting, however, only serves to loosen the fibers. Technical mill operations are still required to release the loosened portions of the plant. These include rolling and gently paddling; the first cracks off the useless woody parts, the second whisks away the separated waste.

Every textile fiber requires cleaning, straightening and combing before it can be spun into yarn. In the case of wool, cotton and most other fibers, these procedures can be more or less easily mechanized. With linen, however, preliminary hand operations are required. The flax fibers must first be laid parallel in such a way that the ends of pieces overlap. This fiber mass is then converted into a continuous ribbon by pressing between rollers and is combed over arrangements of fine pins. Progressive operations continue to elongate the ribbon until, on the spinning frames, it is given its final twist. In most linen processes, the yarns on the spinning frames are

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A warping mill in action; note how the warp is drawn from vertical banks of spools.

XUM

Skein reeling old and new; at left, spinning and boiling the yarn.

eventually passed through warm water to effect a final binding-together of the fibers.

Weaving the Linen Fabric

The weaving of linen is not essentially different from the weaving of other fabrics. Yet unlike other fibers, linen imposes special difficulties on the weaver, and even plain weave, most popular of all for linens, requires endless care and precautions. The production of fancy damasks in linen is among the most intricate and difficult tasks facing the modern weaver.

Bleaching

Linen's showy whiteness is not easily attained; it is a product of hand operations, sunlight and the expert combination of bleaching chemicals. Other fabrics are today bleached chemically under mechanical conditions. Linen is still bleached on the grass and under a clear sky. Chemicals are used in addition to the natural elements, but no substitute has been found for the combined effect of nature and the laboratory. The procedure imposes many difficulties and is obviously time-consuming, particularly in seasons when the weather is mainly unfavorable. The results, however, are felt to justify the difficulties overcome.

Beating and Dyeing

After bleaching, linen is beaten for a period extending from thirty to sixty hours. This gives a part of linen's distinctive finish. Large wooden blocks or *beetles* must be banged on the cloth as it revolves slowly on giant drums. After completion of the beating, the fabric is dyed according to techniques common for most textiles; but even here linen requires special treatment inasmuch as the fiber is relatively impervious to dyeing agents and poses distinctive problems.

LINEN WEAVES

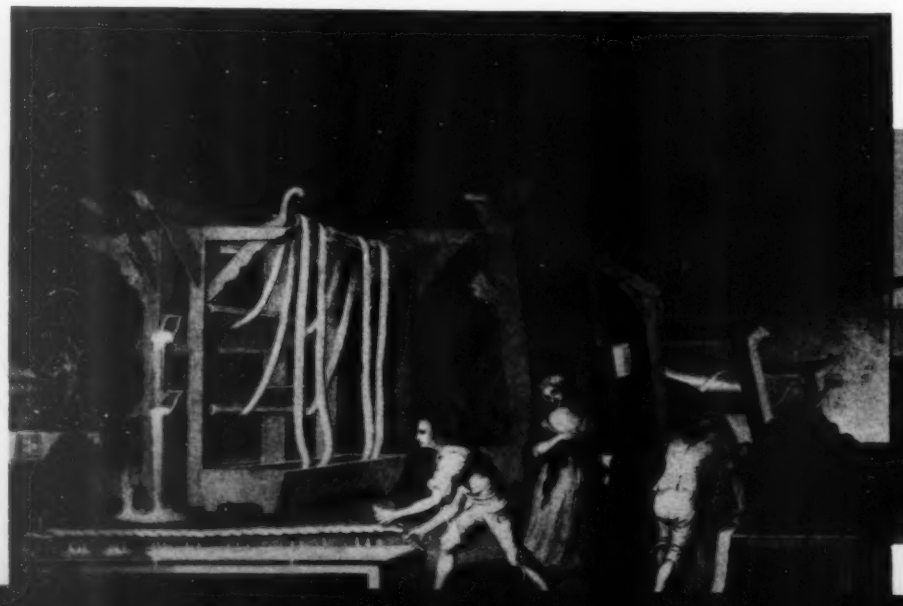
IT IS A FAR CRY from the little Egyptian figures one sees seated in an attitude of infinite patience before model linen hand looms in museums, and the miles of linen that roll so smoothly from the looms in today's modern mills. You have but to collect together a hand towel, a dish towel, a damask tablecloth, a piece of drapery fabric, some dress linen, embroidery linen and linen handkerchiefs, to see the variety of effects modern weaving methods can achieve based on the flax fiber.

With the exception of damasks, linen would lose in effectiveness if woven too intricately. The inherent quality of flax, its enduring look, and its unmistakably well-bred character are distinctive without benefit of design treatment. From the time when the phrase *purple and fine linen* was in literal use, signifying richness in color and fabric, linen has shown to best advantage when simply and skillfully woven.

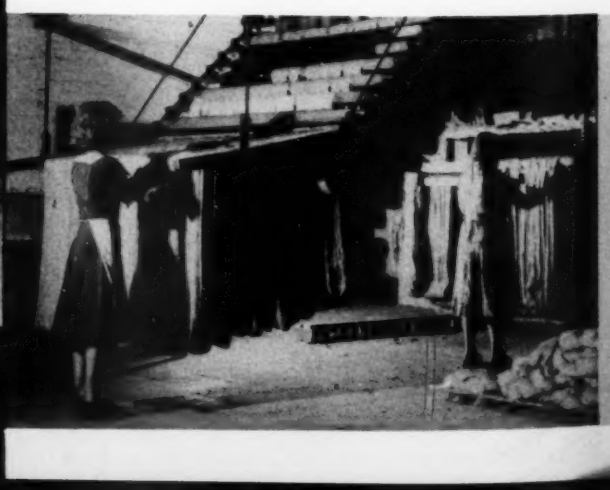
Plain Weave

The simplest way to weave fabric is to have the weft threads go uniformly over one warp thread and under the next. This type of weave, called plain weave, has been in existence for thousands of years, and is still the commonest of all linen weaves. It is the weight, quality and character of the yarn which make the difference between a sheer linen handkerchief and a linen bed sheet, between a piece of embroidery linen and a linen crash dish towel. Basically, all are woven in the same over-one-under-one plain weave.

Variations in the plain weave produce many interesting



Skein dyeing; at left, extracting liquid by twisting; at right, hanging up skeins to dry.



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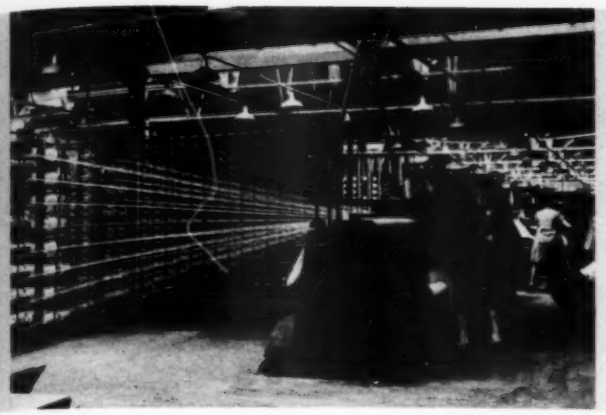

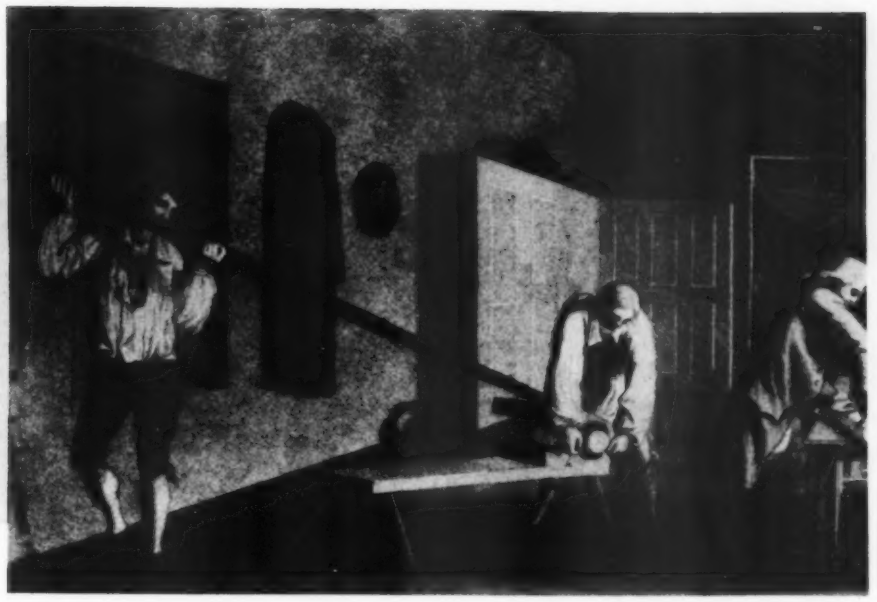

Left, warping from a creel; right, pressing the rolls of cloth into shape by lever.

textures, patterns and designs. If, instead of being carried alternately over and under the warp threads, the weft thread is carried over one and under three or over two and under five, different effects will be produced. The intervals at which the weft threads cross through the warp threads determines whether the resulting cloth is a plain weave, a twill, a herringbone, a satin, sateen, dobby, Jacquard or other weave.

Twill weaves are closer, heavier and firmer than plain weaves, and they are extremely absorbent. Herringbone weave is a variation of the twill.

Smooth Weaves

The satin weave is the basic weave for all linen damasks and is the basis of other types of weave which are common in linen. The satin weave is developed on the principle of the twill, in that the weft threads go over a number of threads and under a different number of threads. It differs from the twill weave, however, in that the points where the warp and weft yarns meet are kept as far apart as possible; the warp threads are thrown to the surface, giving the fabric a smooth face. It is only by looking on the wrong side of the fabric that you can see similarity to a twill; instead of an even diagonal, you see a broken twill effect. In the sateen weave, similarly produced, it is the weft threads which are thrown to the surface.

Jacquard Weave

The Jacquard weave, used for damasks and other patterned fabrics, is a combination of the satin weave, where the background is made by throwing the warp threads to the surface, and the sateen weave, where the weft threads are thrown to the surface. The complicated business of lifting first one combination of warp threads and then another to produce damasks is mechanically handled by the Jacquard loom.

In spite of the costliness and complication of Jacquard machinery and the preference of linen fiber for plain weaving to display its virtues, the Jacquard-woven damasks are among the most classic linens. Authentic instances exist, and are not uncommon, of linen damask tablecloths in regular household use being handed down for a hundred years and longer in families, before the advent of the present strong detergents for laundering. These Eighteenth and Nineteenth Century damasks established a tradition, and their successors are a popular selling item today.

PROPERTIES OF LINEN

LINEN IS THE STRONGEST of all vegetable fibers. It is almost three times as strong as cotton. It is also stronger than wool or rayon. The initial cost of linen is higher than the cost of many other fabrics. Nevertheless, in the long run it is often less costly because of its long life. A good linen dress or suit can be worn for several seasons, actually gaining in attractiveness with wear. Table linens can become heirlooms.

The strength and lightness of linen made it a strategic war material. Practically the entire output of Ireland's linen industry during the war years was used for covering the fuselage of airplanes, for making parachute harness, fire hose, tarpaulins and other military necessities.

Linen absorbs moisture speedily. In fact, one of the most commonly-used ways to identify linen is to place a drop of liquid on it and note the speed with which it is taken into the fiber. Conversely, linen dries more quickly than any other textile. The combination of ready absorption and ready evapo-

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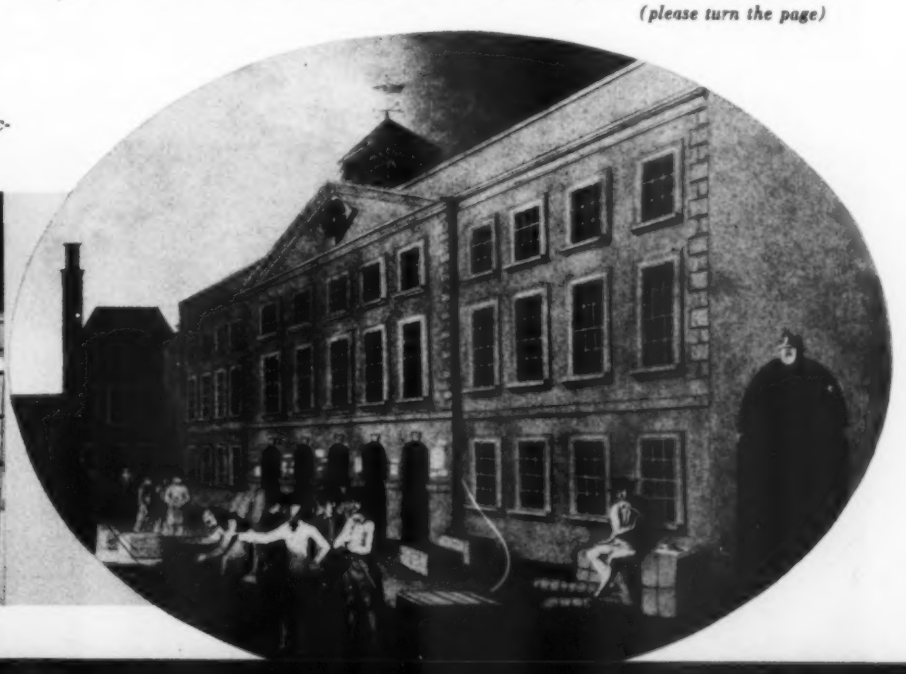
The finished linen goods go out from the factory to points all over the world.



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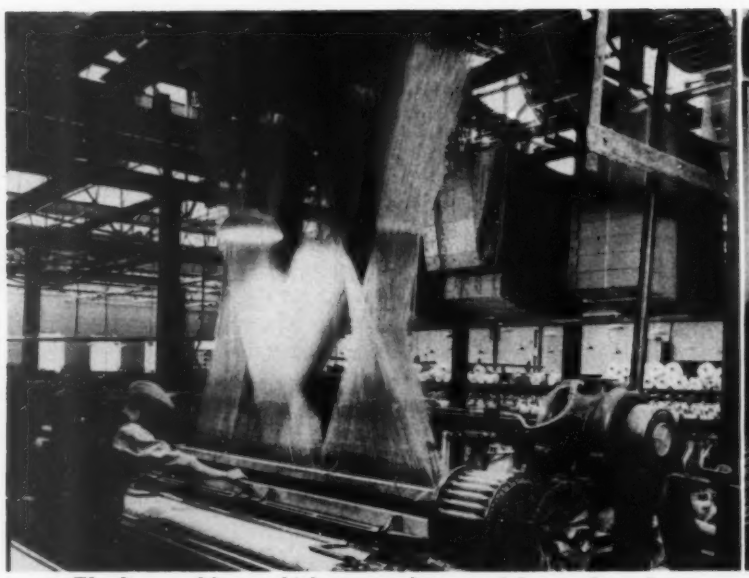
Hackling machine separating the line from tow.

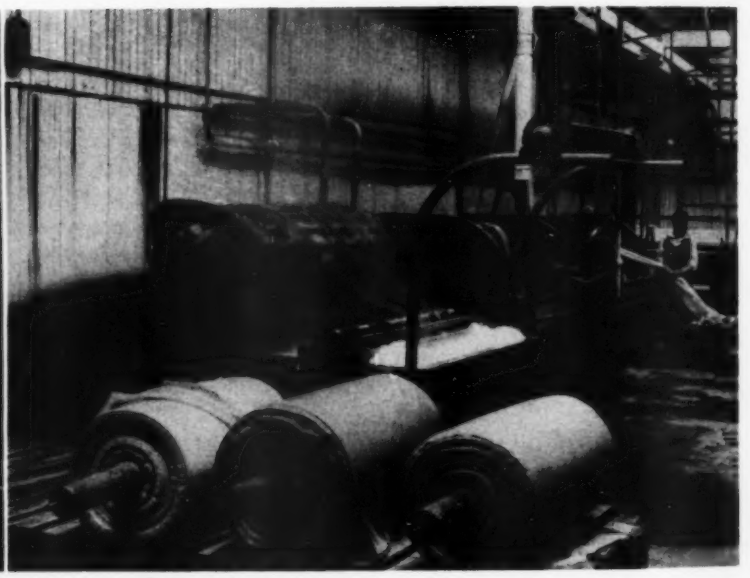
The linen thread is put up in hank form after spinning.

At the weaving mill first the warps are prepared.

The warp threads are set up according to the goods to be made.



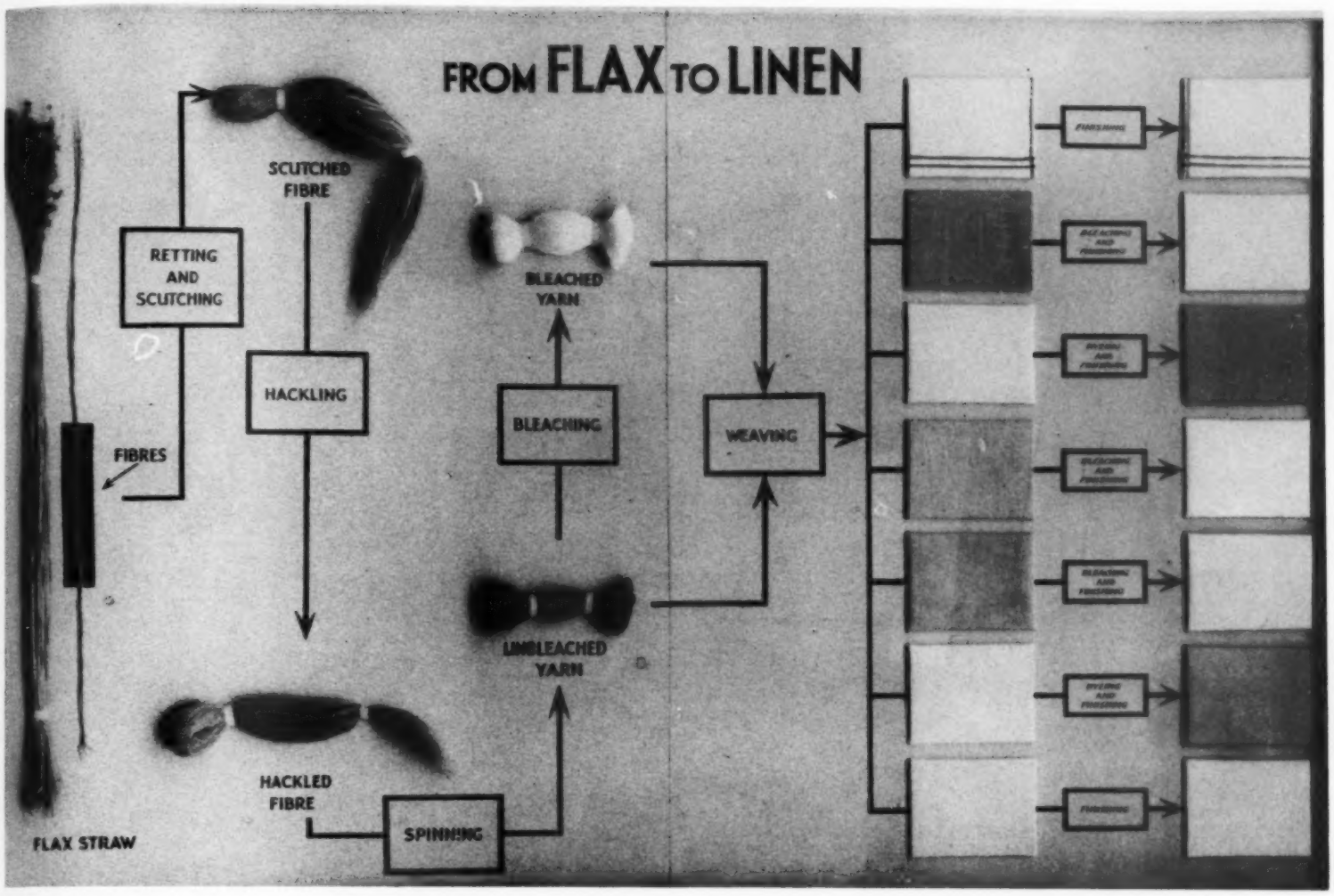
The Jacquard loom which weaves the most elaborate damasks.



Rolls of linen cloth await dyeing operation, at rear.

Packaging the finished article for shipment.

Handkerchiefs are often decorated with designs for appeal.



ration explains why linen has long been accepted as an ideal fabric for handkerchiefs and towels and a ready choice for hot weather wear.

Because the flax plant is long and slender, and the fiber within is likewise long and tenuous, linen is lintless. The absence of short fibers makes lint impossible, because there are no short ends to work loose. That is why linen towels are effective in keeping china and glassware lint-free. In dresses and suits, the same quality helps keep clothes clean inasmuch as there are no short ends to catch dust and soil.

Linen has the advantage over many other fabrics in that it may safely be boiled and thus made completely sterile. Linen surgical dressings and linen tunics for doctors and dentists are virtually standard professional equipment.

Moths are not partial to linen. The fact that linen clothes and household linens may be stored indefinitely without a worry about moth holes has a definite appeal in these days of elaborate moth-preventive measures.

Linen responds more gratifyingly than any other fabric to ordinary, reasonably careful laundry treatment. It gives up stains easily and willingly. Properly dampened, it reacts smoothly and effortlessly to pressing. Few just-laundered fabrics can equal the fresh appeal to both eye and touch of crisp white linen. Even after years of wear and washing, linen never becomes limp or spiritless. The inherent vitality and natural firmness of the fiber keep it alive through long, constant usage.

WRINKLE-RESISTANT LINENS

MANUFACTURERS OF LINEN dress fabrics and suitings had always realized that a disadvantage, as compared to fabrics made of animal fiber such as wool and silk, had been the lack of crease-resistance. They knew that if they could discover a method of treating linen fibers so that they would resist and recover from creasing, it would be of tremendous benefit to the linen industry.

Research laboratories, after more than a decade of experimenting with various processes, ultimately solved the problem; today there are available on the market linen fabrics which resist and recover from creasing in a manner similar to wool and fine silk.

The wrinkle-resistant process consists of impregnating the fabric with a synthetic resin in such a manner that the resin itself penetrates the fiber. The linen is first given a boiling-off treatment (similar to the process which precedes vat dyeing), to remove all traces of dirt and oil. The fabric is then run through a caustic bath. This shrinks the material considerably but opens up the fibers to permit absorption of the resin. After being put through the resin solution, the linen is stretched back to its original width on mechanical frames and run through a curing chamber to fix the resin in the flax fiber and make its resistance to creasing permanent. The fixing process is followed by whatever type of finish is desired.

* * *

TODAY'S LINEN INDUSTRY maintains the great traditions of linen weavers through the bygone centuries. It has broadened its base, by bringing to the great markets of the world goods which once were confined to limited classes of consumers in limited areas. Linen gains in glamor as the years go by; but, as always, it is esteemed for its superlative intrinsic qualities. Thus, while the linen industry looks back proudly to the past, it can regard linen as the royal fabric of today, and can anticipate with confidence, appreciation by, and sales to, an ever-widening public for the future. *(please turn the page)*

Linen manufacture is today, as it was four thousand years ago, a royal art; above, initial and crown of Queen Elizabeth II of England.

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PARENTS' DARLING

Over the years, Galey & Lord cottons have become a tradition in little-girl fashions — and a favorite with parents — by virtue of their own delightfully young, fresh spirit. The charming cotton tweed plaid you see here also brightened the August cover of Parents Magazine. In fact—in every age group—Galey & Lord fine fabrics further the cause of fine fashion.

Galey & Lord *fabrics from* Burlington Mills

1407 BROADWAY, NEW YORK 18

Toni Owen's

dillies in challis

look like wool, wear like nylon, wash like cotton and feel like heaven.

In Bates new dynelon* challis:
the long-sleeved blouse, about $10.00
the cinch-sashed blouse, about $10.00
the body-beautiful skirt, about $13.00
In the colors shown, at fine stores.

BATES DYNELON* CHALLIS

Marvelous new mating of dynel, nylon, combed cotton is a dead-ringer for sheer wool challis. But it washes beautifully, wears better, costs less. It releases creases, stays fresh and clean, resists perspiration, moth, mildew. It's colorfast, won't shrink more than 2%. And all its advantages are permanent for life!

BATES FABRICS, INC., 80 WORTH ST., NEW YORK 13

JUST HANG IT UP!

Bates

DISCIPLINED FABRIC®

*TRADEMARK

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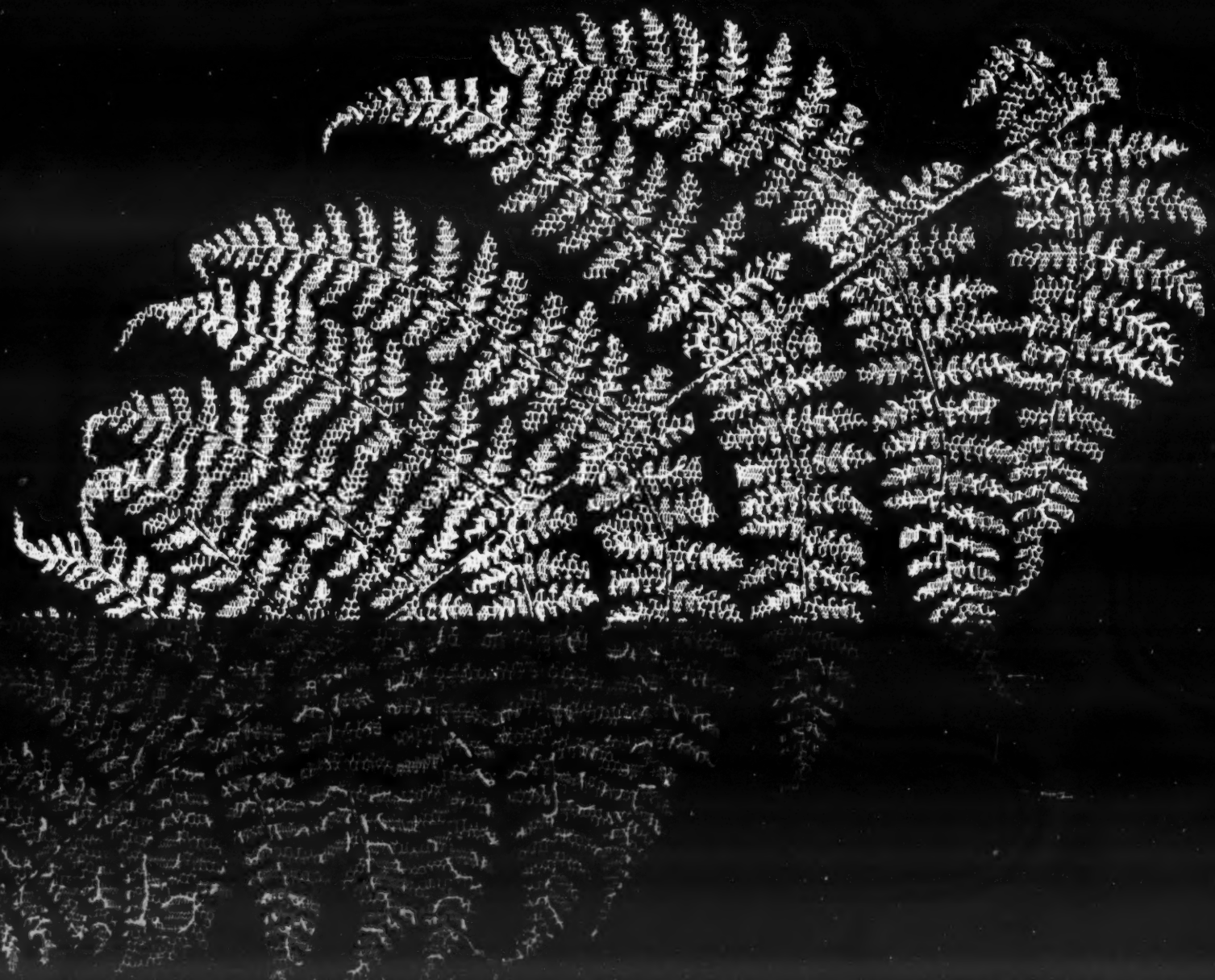

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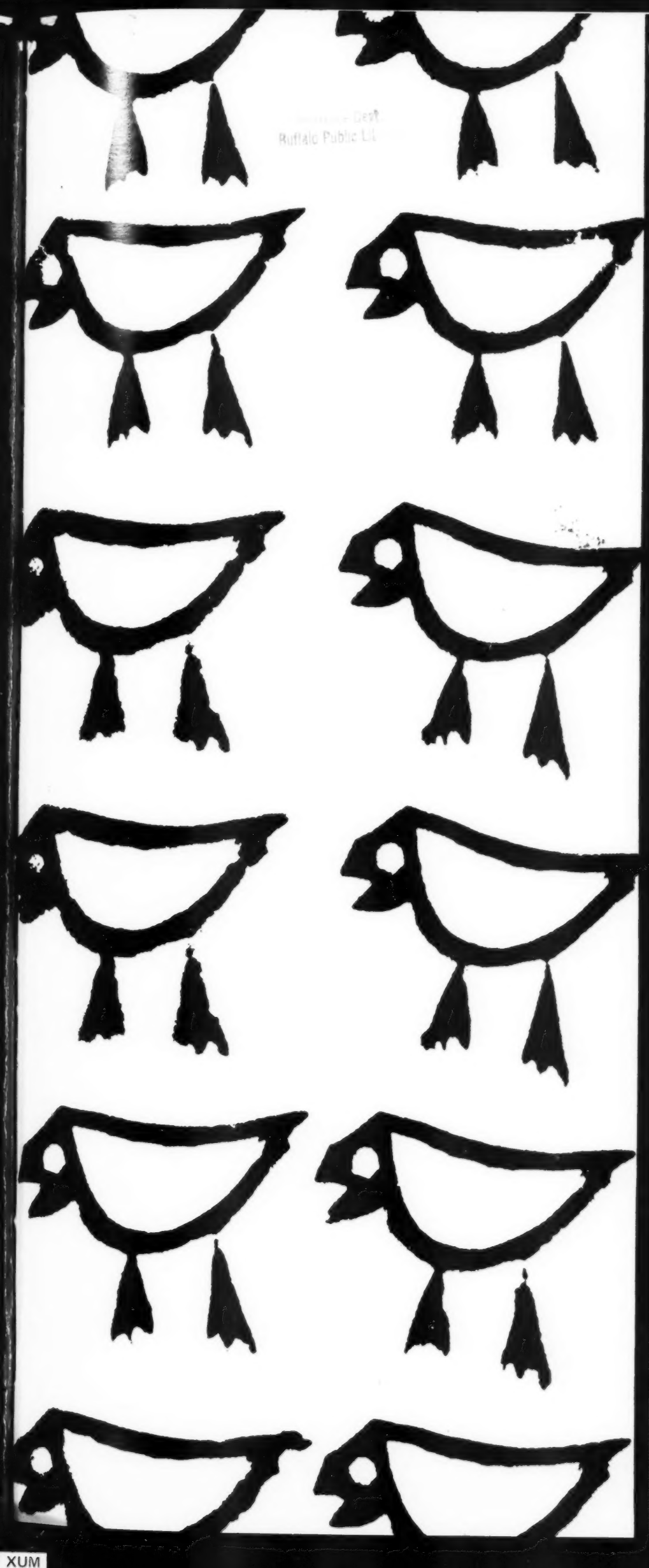

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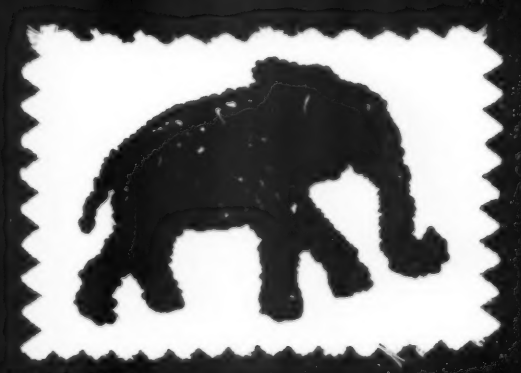

in this issue . . .

JOTTINGS FROM AN AFRICAN NOTEBOOK

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QUALITY
STYLE
CRAFTSMANSHIP
FORSTMANN
100% VIRGIN WOOL
©
Look for this label ... it identifies
the finest woolens in the world
FORSTMANN WOOLEN COMPANY
PASSAIC, N.J.

American Fabrics

. . . dedicated to the belief that Fashion begins with the Fabric . . . that the American textile industry casts a major influence on the economic and social aspects of the world in which we live and that it has deservedly attained the world's pinnacle from which it can never be dislodged. This volume number twenty-four of American Fabrics, focusing its editorial spotlight on a report, complete with reference samples, of the present Status of the New Fibers and Blends, and presenting the African Design Notebook of a famous American designer . . . is offered as a measure of help, of service . . . and, we hope, of inspiration.

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Number 24

Winter 1952-53

American Fabrics

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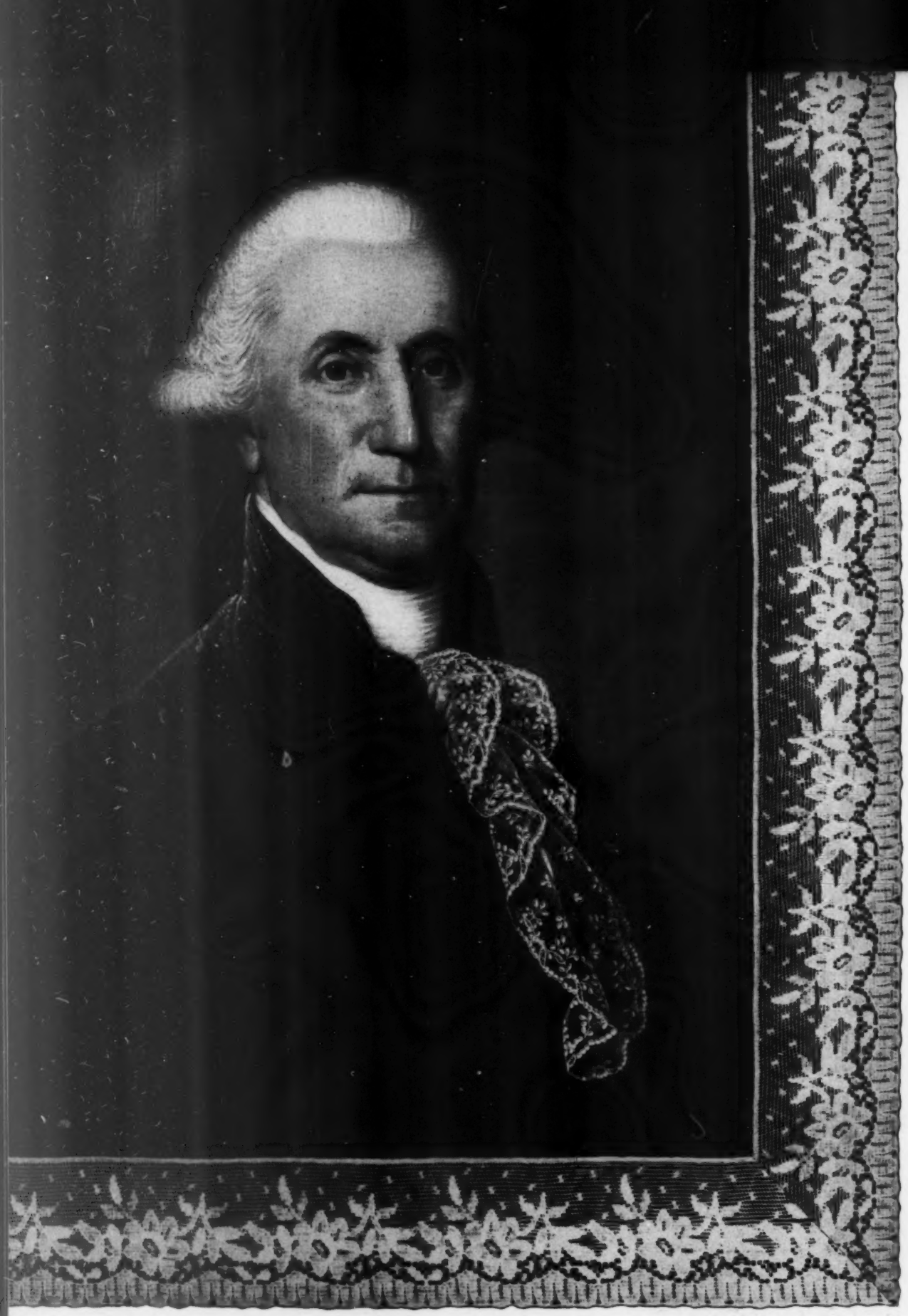
LATE DAY AND EVENING...
THE RAYON CRÊPE DRESS
Ceil Chapman's very special, very lovely drapery makes pure elegance of a slim sheath, a removable shoulder piece that flows to the floor. Of Bloomsburg's Calabar, one of the new full bodied crêpes of Avisco "Minifil" rayon and acetate yarn. Bonwit Teller, New York; Julius Garfinckel & Co., Washington, D. C.; The May Co. Wilshire Blvd., Los Angeles.
Avisco®
"Avisco" is the trademark for products of American Viscose Corporation, 350 Fifth Avenue, New York 1, N. Y.
Needletuft rug made of Avisco Rayon.



Portrait of George Washington
ADOLPH WERTMULLER
American. 1751-1811
Courtesy of The Metropolitan Museum of Art

Exquisite LACE
enhances
this portrait...

Exquisite LACE by North American enhances your garment!

Bringing a sense of Old Master beauty
to the fashions of today... the exquisite workmanship
of laces by North American.

North American Lace Co. Inc. 295 Fifth Avenue, New York City

CALCULATED CONTRAST

Adele Simpson adds fresh thinking to the traditional elegance of the Edwardian era. Here is yesterday brought up to date with a twist that would shock the Edwardians . . . the contrast of ermine and sparkle on a background of fine Galey & Lord cotton—for the tropics now—for Summer evenings later.

Galey & Lord *fabrics from* Burlington Mills

1407 BROADWAY, NEW YORK 18, NEW YORK

ENKA RAYON

HERBERT SONDHEIM DRESS

Clouds and clouds of Goldenbro chiffon made entirely of Enka Rayon yarn . . . the most enchanting fabric of all.

Saks Fifth Avenue; L. S. Ayres, Indianapolis
Neiman-Marcus, Dallas

AMERICAN ENKA CORPORATION
206 MADISON AVE., NEW YORK 16, N. Y.

RAWLINGS

KRAMER JEWELRY

HIGH IN

WORLD ACCEPTANCE

SINCE 1805

In Switzerland, a nation unrivaled in the skills of
weaving and world famous for its quality, the
name Nelo is a tradition. Since 1805 the pageantry of fashion here
and abroad has drawn inspiration from textiles of Nelo origin.
No one line of dress goods provides all the answers,
but the buyer planning his Spring Season with
the benefit of imported or domestic Nelo cottons and
synthetics will have his good judgment richly
rewarded come April, May, June and July.

NELO FABRICS SINCE 1805 NELO TRADE MARK

Nelo fabrics

TEXTILE LOOMS, INC., 1328 B'WAY, MARBRIDGE BLDG., N. Y. 1

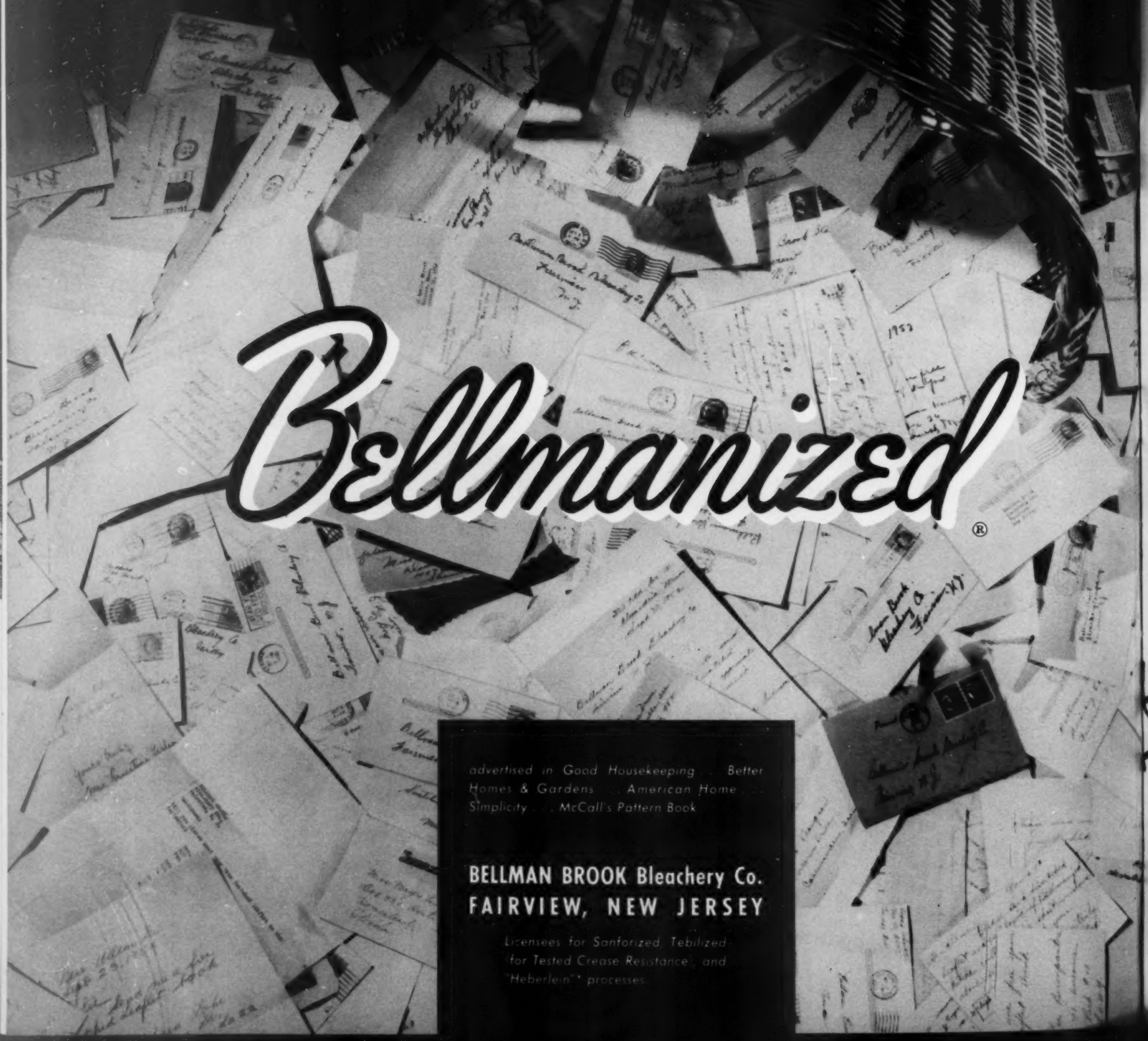
exclusive retail distributor:

BART SCHWARTZ CORPORATION, 1407 BROADWAY, NEW YORK 18

Since adopted and perfected in this country by a finishing plant, the original Swiss permanent finish process has been acclaimed by millions as "Bellmanized" finish . . . the underlying permanent starchless beauty which remains clear, sheer and lustrous for the life of the cotton. As processed by Bellman Brook, there is only one word for such a finished quality, it's "Bellmanized".

VIRTUALLY *Everybody*

HAS ONLY ONE NAME FOR IT!



Bellmanized®

advertised in Good Housekeeping . . Better Homes & Gardens . . American Home . . Simplicity . . . McCall's Pattern Book

BELLMAN BROOK Bleachery Co.
FAIRVIEW, NEW JERSEY

Licensees for Sanforized, Tebilized (for Tested Crease Resistance), and "Heberlein" processes*

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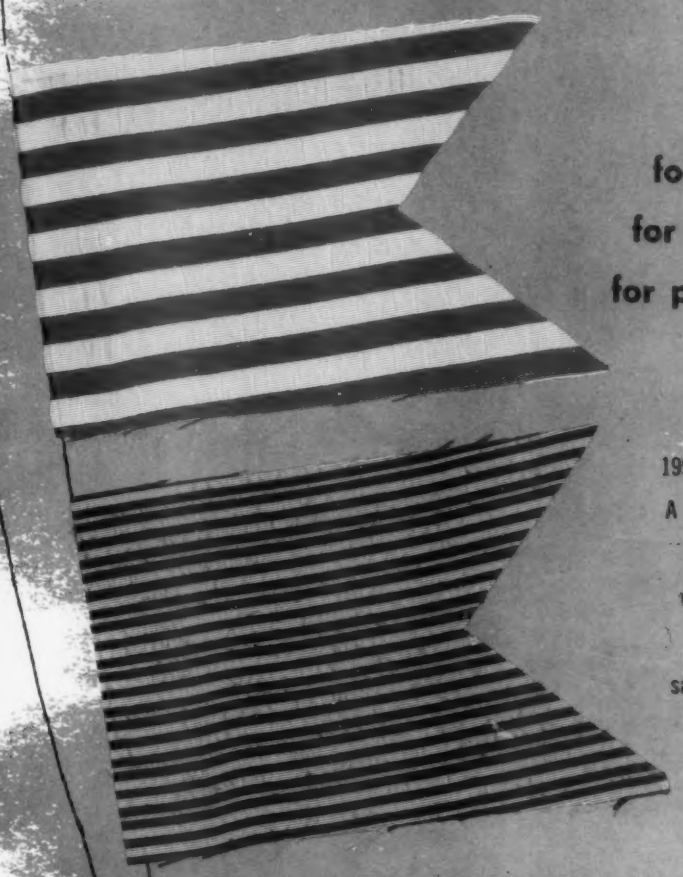
PERMANENT CRINKLE

Play-seer

WASHABLE



for active hours...

for leisure hours...

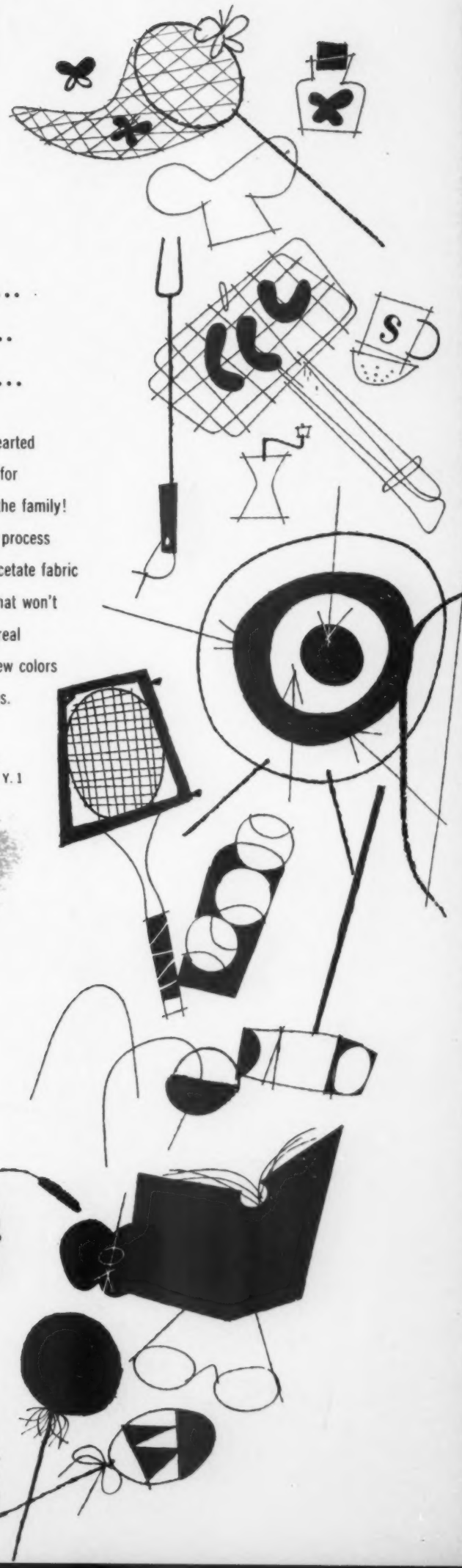
for pleasure hours...

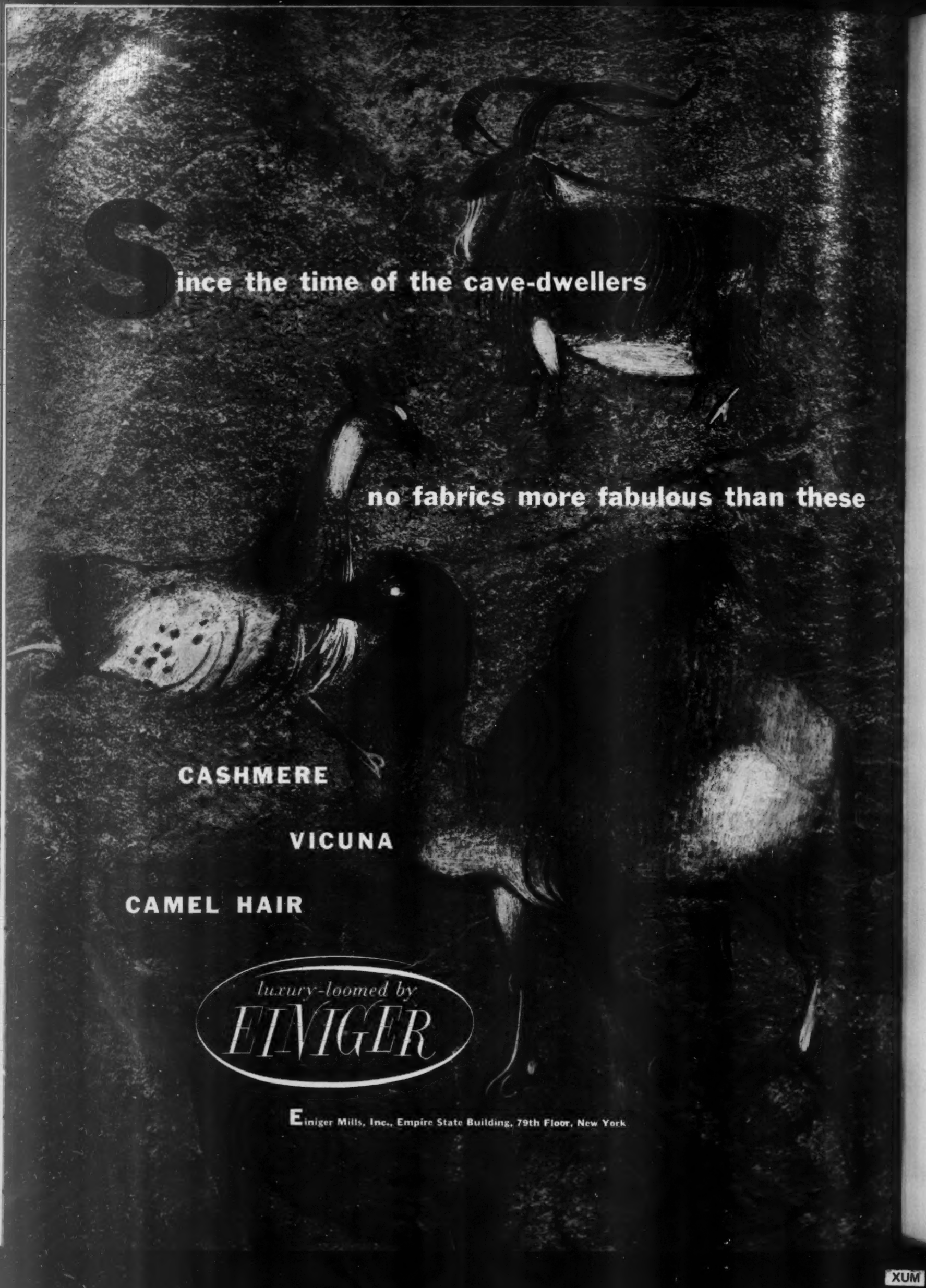
The newest, most light-hearted seersucker you've seen for 1953 spring fashions for all the family! A revolutionary new Beaunit process endows this rayon and acetate fabric with a permanent crinkle that won't wash or iron out. Here's real sales excitement in smart new colors in wide and thin stripes.

BEAUNIT MILLS, INC.,
450 SEVENTH AVENUE, N. Y. 1

BEAUNIT FABRICS

BEAUNIT



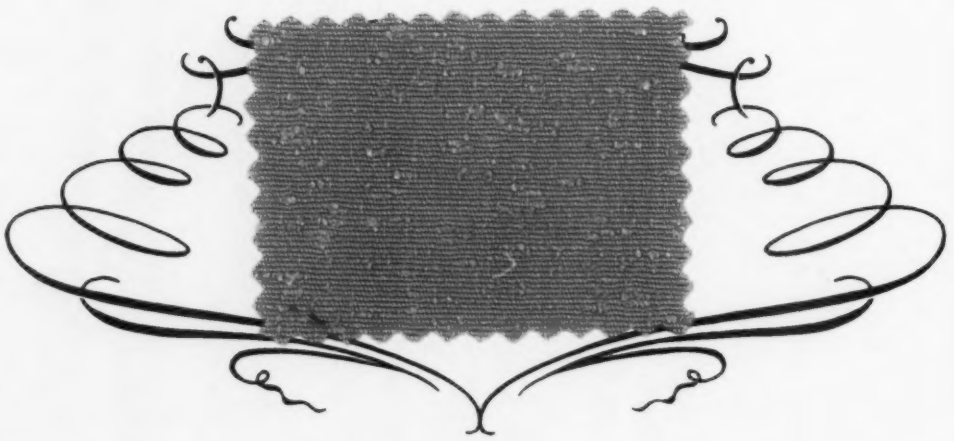

Since the time of the cave-dwellers
no fabrics more fabulous than these
CASHMERE
VICUNA
CAMEL HAIR
luxury-loomed by
EINIGER
Einiger Mills, Inc., Empire State Building, 79th Floor, New York

J. Jendman, Inc.
Laces

135 MADISON AVENUE NEW YORK 16, N.Y. MURRAY HILL 9-7775

One of the Proudest Products
of Glen Raven Mills . . .

BOUCLE



We developed this amazing boucle yarn of 100% pure Viscose . . . then wove it with traditional Glen Raven exactitude into a wonderful, versatile fabric that has already won an enthusiastic reception.

Possessed of fine drape and hand . . . durably crease resistant . . . Glen Raven's Boucle reflects the painstaking craftsmanship characteristic of Glen Raven's century-old standards.

AMONG THE FINE CONVERTERS FEATURING THIS FABRIC

IS **Klebanow** FABRICS, WHO CALL IT **RIBIERRA**

Another Quality Glen Raven *Controlled Fabric*

"Fashion Right"

GLEN RAVEN MILLS, 265 MADISON AVENUE, NEW YORK 16, N. Y.

It's news for spring!

IT'S NUVRON*

*Burlington's exciting new family of Dacron** blends.*

First member! This half Dacron,
half Rayon is entirely right
for suits, coats and sportswear

Here's a crisp, cool weather look for Spring days—"Fifty-Fifty" NUVRON. It looks and feels like a very fine worsted...and it's designed for a maximum of wear with a minimum of care. Practical? Yes—but with the fine hand you look for in luxury fabrics.

This is what NUVRON will do for you and your customers. It washes and dries quickly...keeps a day-long bandbox look...drapes easily, fashionably...resists mildew...offers longer, *much* longer wear...takes to pleats for a lifetime. And it's not only crease-resistant—the wrinkles drop out *completely!*

NUVRON is a wonderful traveling companion that won't run back to your complaint department *ever!* It's another Burlington fashion first that brings you performance, promotion and profits.

WOMEN'S SUIT, COAT AND SPORTSWEAR FABRIC DIVISION

Burlington

1407 Broadway, New York 18

Burlington Mills
"From into the Life of America"

*NUVRON IS A TRADEMARK OF BURLINGTON MILLS CORPORATION **DUPONT'S POLYESTER FIBER

A LOOK INTO THE FUTURE

We are pleased to announce that

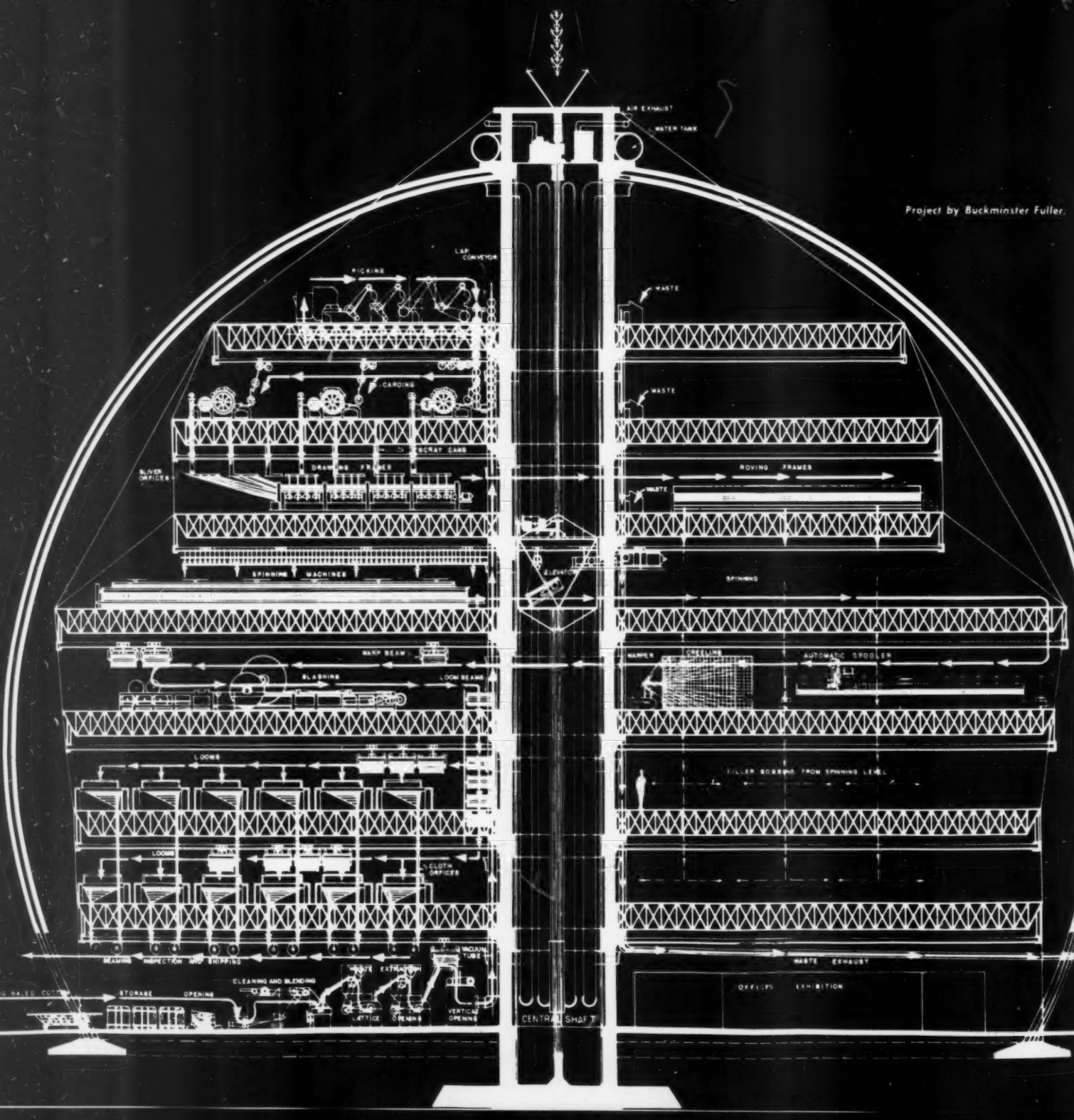
beginning with issue No. 25, April - May June 1953,

a special section dealing with

INDUSTRIAL FABRICS

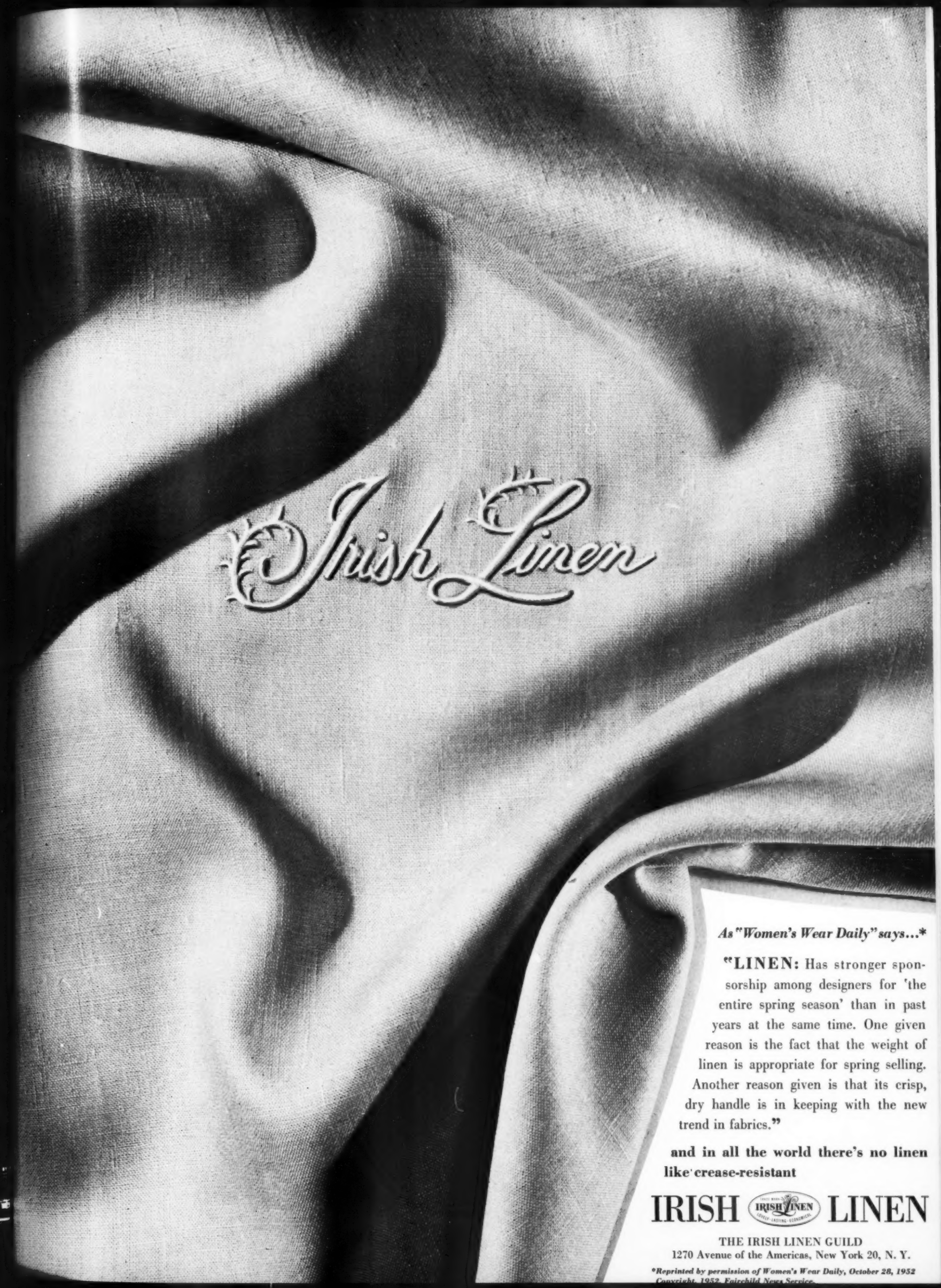
will be published in each quarterly issue

of American Fabrics Magazine.



Project by Buckminster Fuller.

XUM



*As "Women's Wear Daily" says...**

"LINEN: Has stronger sponsorship among designers for 'the entire spring season' than in past years at the same time. One given reason is the fact that the weight of linen is appropriate for spring selling. Another reason given is that its crisp, dry handle is in keeping with the new trend in fabrics."

and in all the world there's no linen like crease-resistant

IRISH LINEN

THE IRISH LINEN GUILD
1270 Avenue of the Americas, New York 20, N. Y.

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XUM

RAYONS

EVERGLAZE* 500
EVERGLAZE* 501
EVERGLAZE* 503
EVERGLAZE* 505

like cottons—now become

more luxurious
more beautiful
more desirable
more versatile

because they are Everglaze*

Rayons that are new and exciting . . . rayons that foreshadow a complete fashion trend: "Everglaze" rayons! These wonderful new fabrics guarantee converter, cutter, and consumer many outstanding improvements, including:

- *the much-needed and all-important quality of abrasion resistance*
- *actual transformation of the rayons into fabrics with interesting, luxurious wool-like or linen-like hand*
- *improved, durable wrinkle-resistance and dimensional stability*

And, in the application of these wrinkle-resistant, abrasion-resistant, and stabilizing properties, the quality of the fabric is materially improved. On *any* fabric — rayon, Orlon, nylon, acetate, cotton fibers, and mixtures —the "Everglaze" trade-mark is a guarantee of quality—a guarantee that the fabric possesses all the world-famous, desirable "Everglaze" properties.

Madame Biki of Milan, Italy, the famous designer, uses one of the new "Everglaze" rayons by Crown Fabrics Corp. to create a charming suit for Neva Jane Langley, Miss America 1953.

shumagic fabrics
EVERGLAZE
JOSEPH BANCROFT & SONS CO.

*A trade-mark signifying fabric processed and tested according to processes and standards controlled and prescribed by Joseph Bancroft and Sons Co.

cottons by STEVENS

J. P. STEVENS & CO., INC., Stevens Building
Broadway at 41st Street, New York 36, New York

XUM

Serge Kogan . . . *bright new star*
in the Paris fashion horizon creates a
new place for lace in sportswear . . . exclusively
for D. Strauss *as an inspiration to the entire fashion world.*
There's a place for D. Strauss *Lace*
in YOUR new collection—let us show you where.

COAT—heavy guipure cotton lace over terry cloth.
SWIM SUIT—heavy guipure cotton lace over pima cotton broadcloth.

D. Strauss CO. INC., 1370 BROADWAY, NEW YORK, N.Y.

The fabric of AMERICA

Woven strong in face of repeated challenges to our nation's spiritual and material resources, the heritage of our institutions and national unity remains the rallying point for the hopes of the free peoples of the world.

Because the responsibility of such leadership must be met with more than words, technological advancement and expansion of production capacities of the nation's industries must continue unabated to serve the needs of domestic and world markets, and our national security.

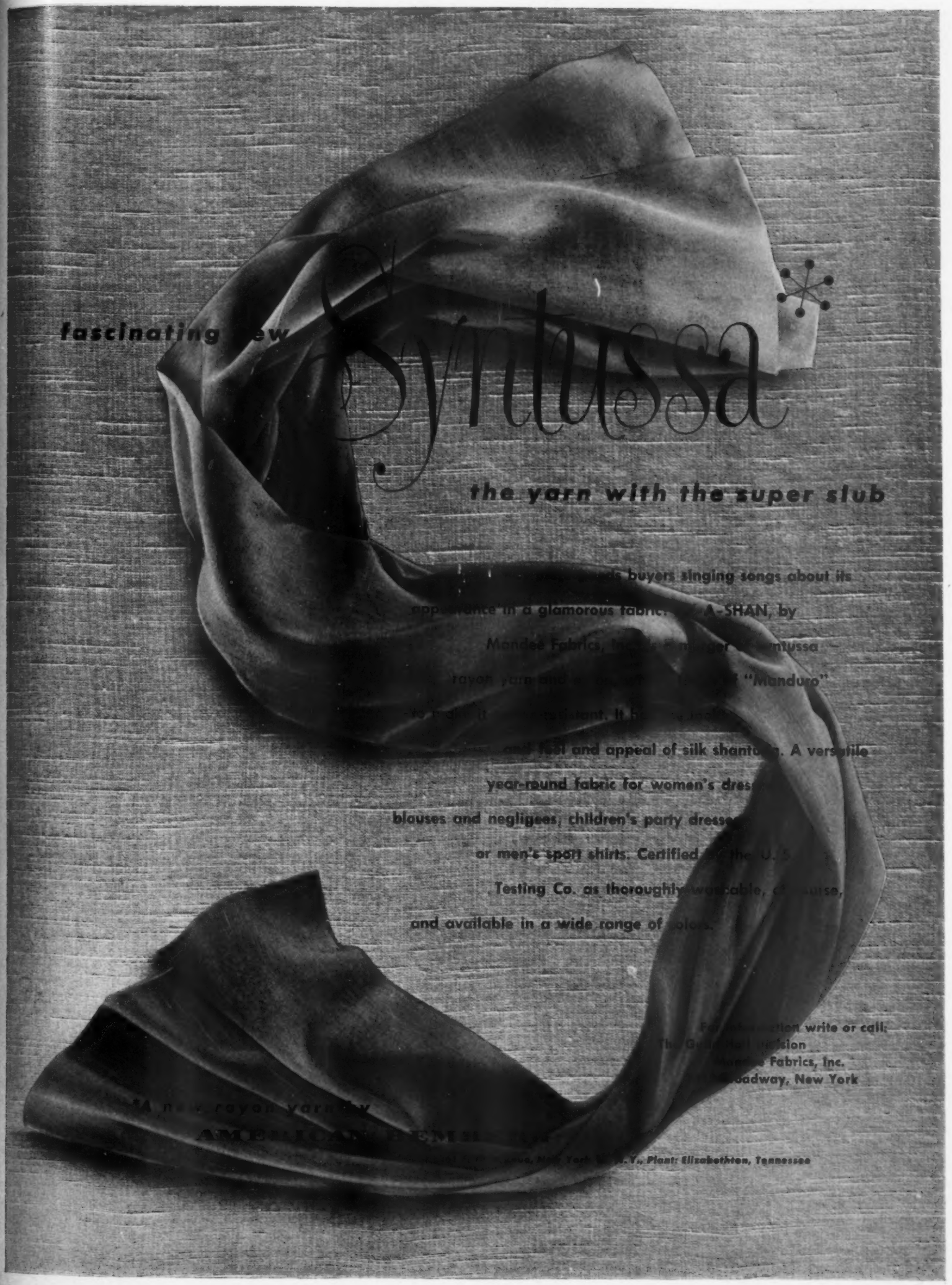
To this end, Ciba's newest plant, the most modern of its kind for the production of vat colors of superior light-and-wash-fast qualities, will be dedicated. Soon to be in full-scale operation, "Ciba Toms River" will serve an important need, and take its place with other long-established Ciba enterprises serving both industry and public health in peace and war.

Part of a battery of condensation kettles especially designed for the new plant by Ciba engineers.

Panorama of 35 acres of buildings, access roads, and effluent treatment facilities that comprise Ciba Toms River Vat Dyestuffs Plant

CIBA
builds to serve

PROGRESS REPORT #4 in a series to tell the story of Ciba's expanding facilities for service.


fascinating new
Bemtussa
the yarn with the super slub
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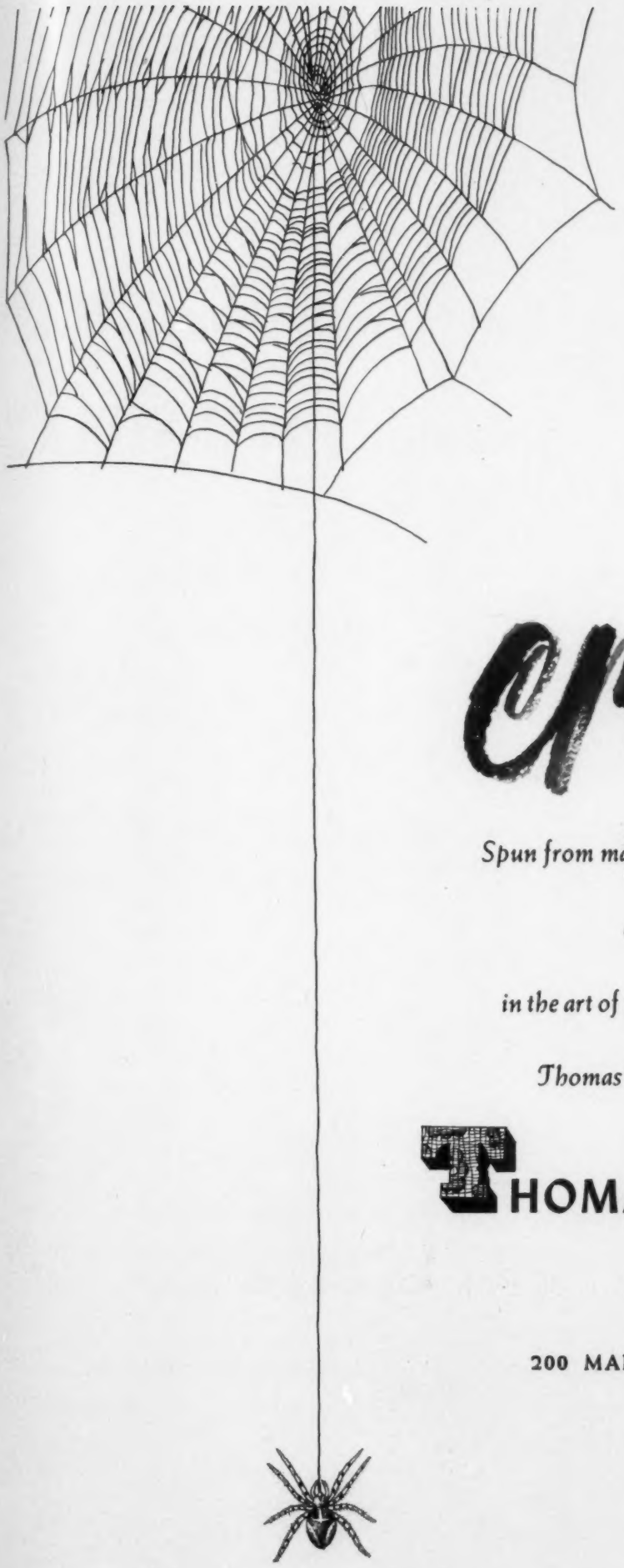

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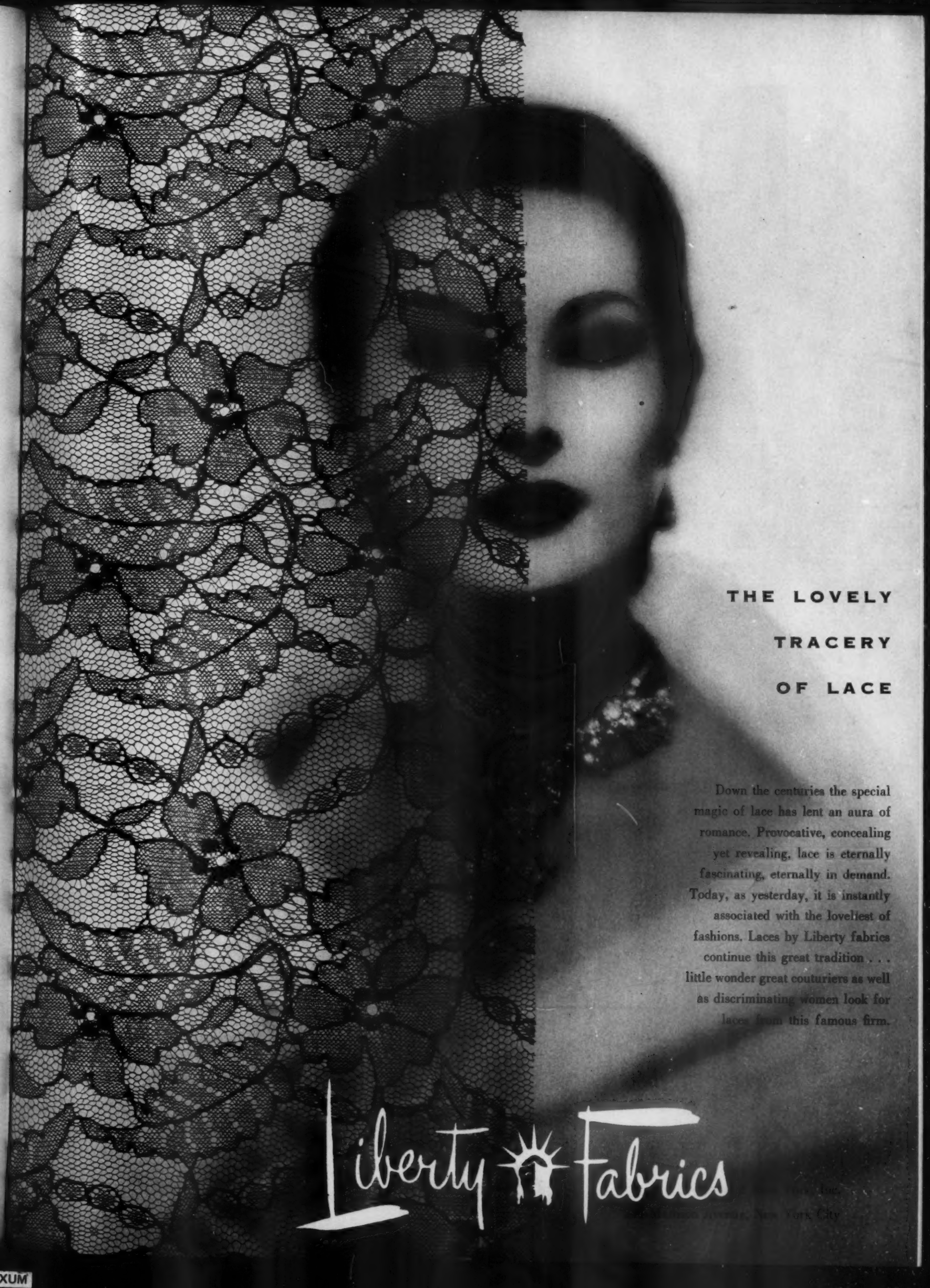
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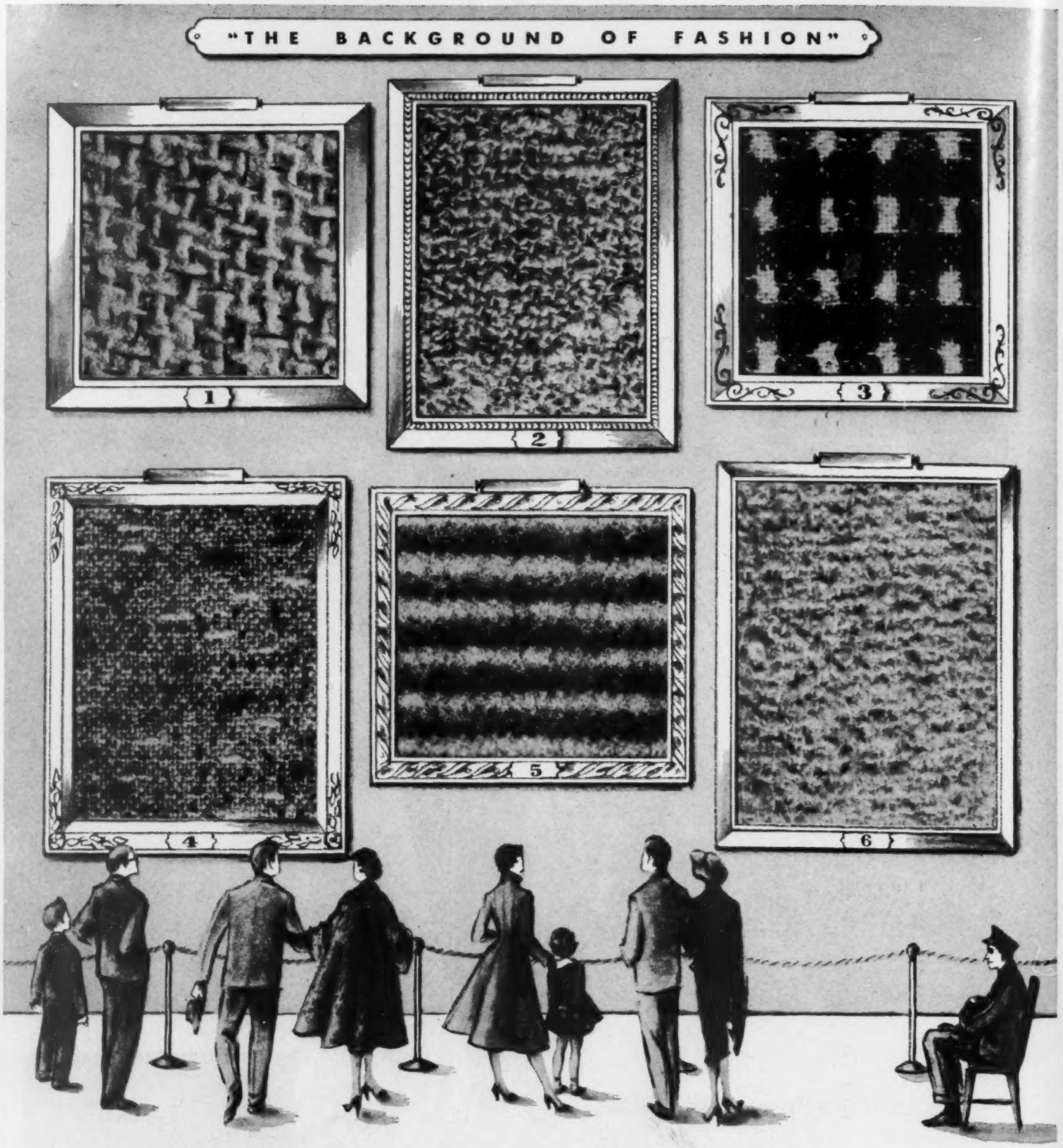

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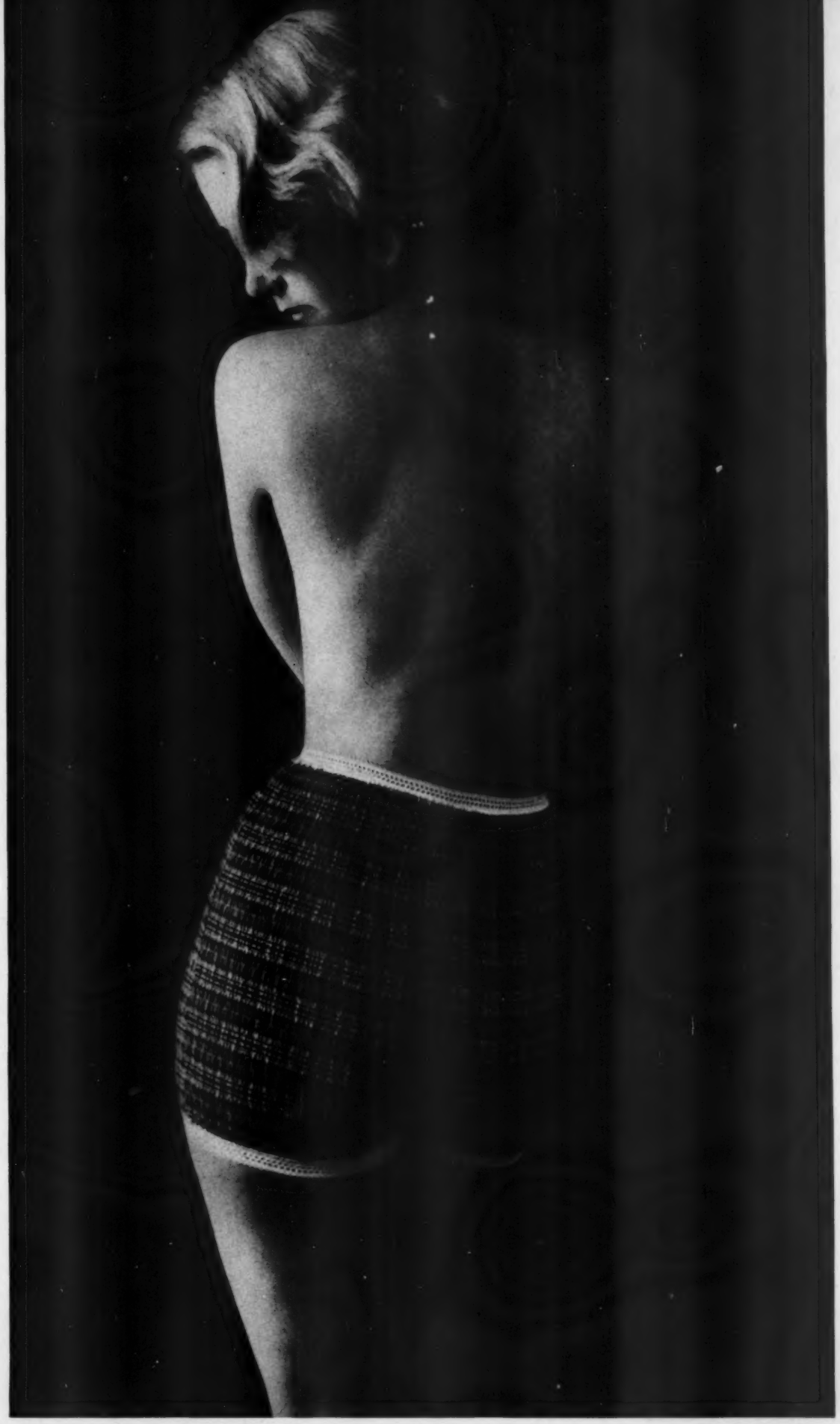

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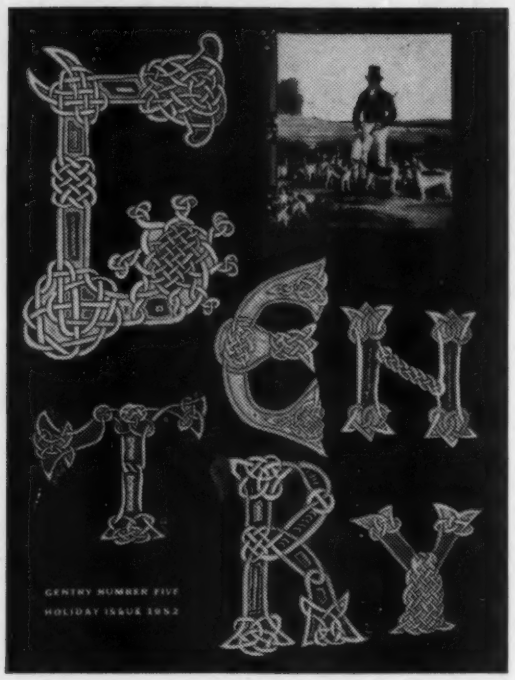

What do you know about Gentry?

GENTRY is a quarterly publication edited for the individual whose mind is ever open to new ideas, new forms; for the individual who respects the best of thinking and art which has endured over the years; who feels that there is much more to living than merely making a living; and who seeks constantly to gain more from his hourly association with people, objects and ideas.

We realize the difficulty of trying to give a picture of GENTRY to those who have not actually seen it. The worth of a magazine depends upon both the ideas within its covers and the form of presentation—and GENTRY's ideas and presentation are not at all ordinary. For example, when GENTRY prints a story on fishing, our technique calls for the tipping on of an actual trout fly in the book. When GENTRY illustrates a new coat, an actual swatch of the fabric is tipped alongside the photo to make it come to life.

Besides good living and fashion, GENTRY believes that people do not live by bread and circuses alone. Art, writing, thinking . . . all geared at the highest possible level, all to give the reader a truly unusual and not-to-be-found-anywhere-else publication . . . this is GENTRY. Eight dollars a year for a quarterly magazine may be a lot of money, but when you think that a single issue of GENTRY contains as many as 20 to 50 individual hand-inserted tip-ons and reference samples, perhaps the price will not seem so high to you. Remember, too, that GENTRY is printed in three processes — letterpress, sheet-fed gravure and offset — in beautiful colors on fine papers, is bound in semi-stiff covers, and is finally delivered to you in a heavy cardboard cover to insure its perfect condition.

GENTRY, despite its high price, is not a magazine for the wealthy alone; it is, rather, for those rich in mind, and such of your friends as can make full use of GENTRY's stimulating and inspirational content will consider it a superb gift.

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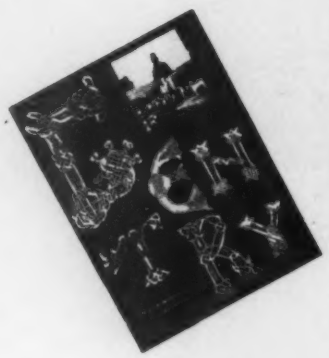

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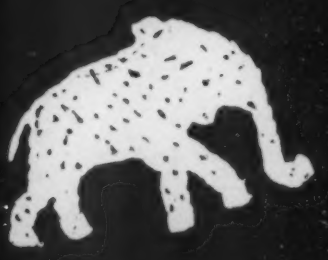
CAROLYN SCHNURER'S AFRICAN TRIP



on the cover

Design by Carolyn Schnurer
embroidered by L. Hollander Co.
on Everglaze cotton fabric

CAROLYN SCHNURER'S AFRICAN TRIP

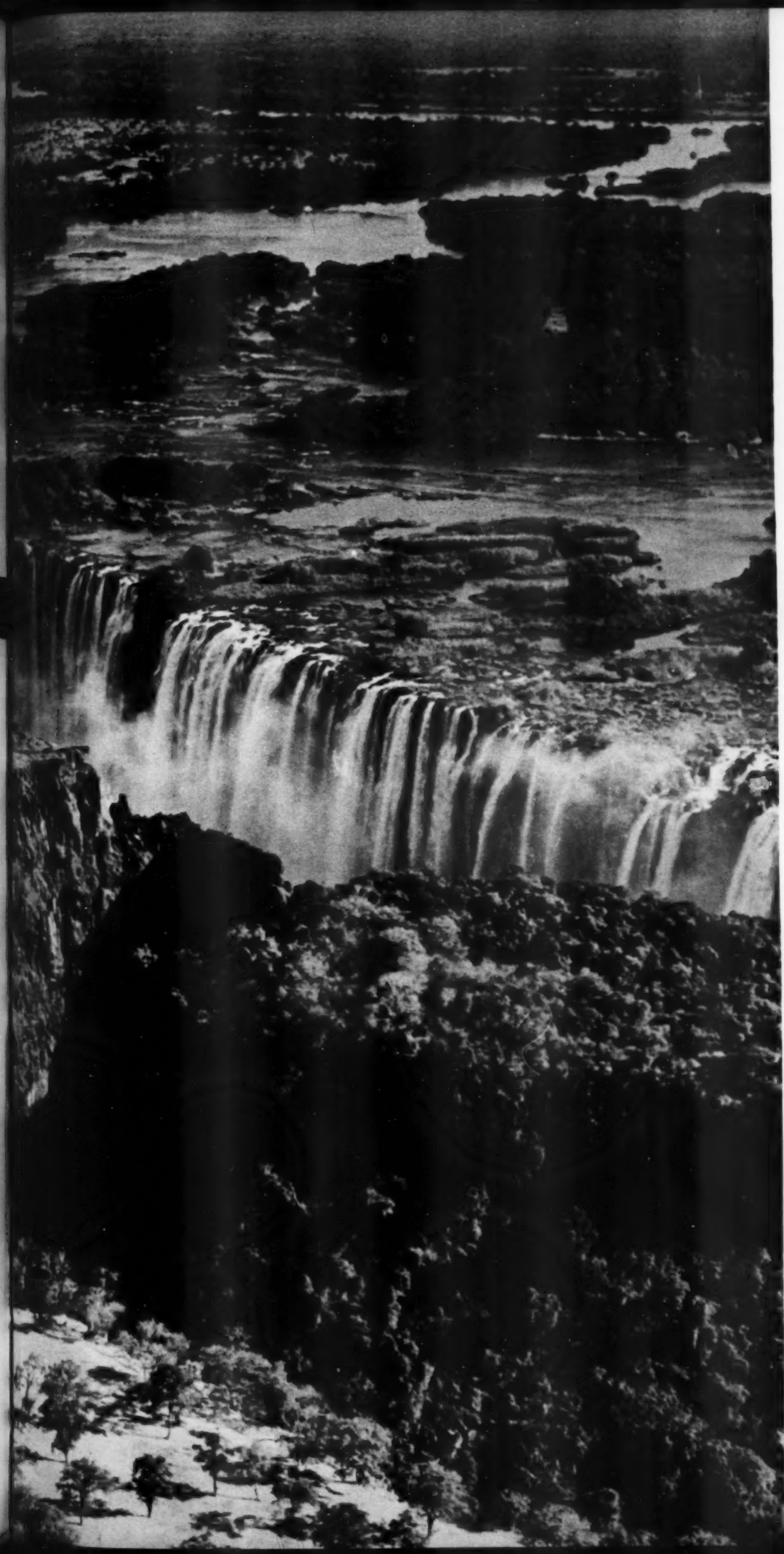
Carolyn Schnurer is a designer who well understands that the world is her oyster in terms of extracting from it sustenance to keep alive her fresh fashion approach. She is ever seeking new ideas to incorporate into both fashions and fabrics and the following pages are testimony to this premise... the premise that every culture, whether primitive or advanced, can feed the fashion industry. It only depends on the eye that can see and the quick sensitivity that can perceptively adapt.

Carolyn Schnurer went to the Gold Coast and to South Africa and brought her ideas and her impressions back to the United States. A few of the jottings which fill her notebooks with form and color are reproduced in these pages. They reflect the flavor of the African scene, as viewed through the eyes of a sympathetic and understanding individual. She has perceived the essence of the textures, colors and motifs which go to make up this scene. From her impressions gathered in the form of raw material, Carolyn has been able to extract, synthesize and distill her own particular, and potent, type of desirable fashions for the American way of living.

The mainstay there of native clothing is traditionally cotton. Because of this her ideas found natural expression and interpretation in cottons. In carrying through her interpretation Carolyn Schnurer selected the family of Everglaze fabrics since they possessed the diversification of properties it required. Important, too, was the fact that these fabrics possessed adaptability in texture and richness of color — the two salient features of African life that most touched her during her travel there.

After deciding upon her basic cloths Carolyn Schnurer went to the various designers and converters in the cotton textile field. With their cooperation and understanding she has brought to life a series of American manufactured fabrics brilliantly reflecting what she saw and felt in Africa.

It is with special pleasure that the editors of AMERICAN FABRICS present the rich, inspirational findings of Carolyn Schnurer and their translations into fabrics and fashions for the American scene. — CORA CARLYLE



The textures of the forest and rocks, the river and the falling water of the great Victoria Falls are full of design inspiration.

"South African flowers have
no smell.

South African birds have no
song.

South African rivers have no
water.

South African women have
no virtues."

LOCAL SAYING

"Some other native expressions:
'The light is killed'
'That be finished'
'Softly, softly' means
go slow
Hors d'Oeuvres called
'Small chop' "

"The lorries in the Gold Coast have different expressions painted on the backs:
'Mind your own'
'Let them say'
'God First'
'Me and You' "

A group of Zulu huts nestles on the verdant slope of the Valley-of-a-Thousand-Hills.

"Lion on road — safe if you remain in car (I'm not that curious to get out).

Lion evidently considers a car a mechanical animal.

They often stampede with car.

"The European homes on drive to Pretoria very modern in architecture.

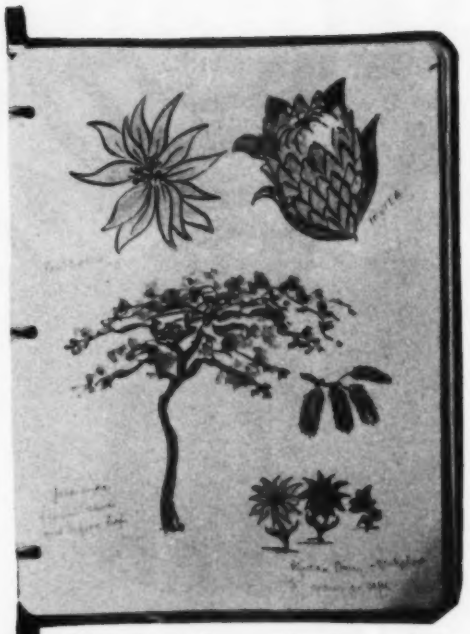
"Dutch houses are whitewashed with scalloped gables and have green shutters.

"Protea — great many pinkish flowers called protea.

"Saw native women carrying sewing machines on top of their heads.

"Some children carry an apple on their head when they go to school."

"Springbok — dainty deer typical of South Africa. Distinguished by white on its belly. Beautiful thatched roofs."



"Pretoria is famous for Jacaranda trees — when the tree blooms there are no leaves."

"The costumes of the Voortrekkers — the pioneer Boers — are very much like our own pioneer costumes."

JOTTINGS FROM CAROLYN SCHNURER'S AFRICAN NOTEBOOK . . .

Johannesburg

"The Mene dances . . . saw several different tribe dances. The war dances in their native costumes. This takes place in an open-air arena with a thatched awning as partial coverage and protection from sun. The dirt floor in this stadium was the color of the broken clay of a flower pot. On this stamped the black footed natives in wonderfully colorful costumes.

"Pink and orange

"White and lemon yellow

"Black and red

"Dead white, bright colored ribbons.

The stately giraffe translated into a fashion print. One from an interesting group of Buty-Chyne Everglaze cottons by ARTHUR BEIR & CO.

"Fantastic bead skirts.

"Fringed belly-bands, leghorns of feathers, feathered arm muffs.

"Short two-tier skirts over white shorts.

"Side-wrapped skirts over white shorts

"A wonderful off-beat rhythm.

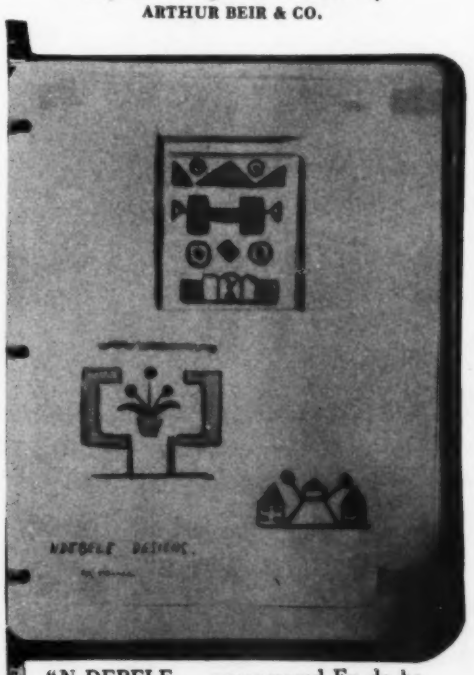
"Audience is both European and native. Each set sits in separate sections.

"Leader blows on whistle which signals various steps.

"At intermission time, tea and raisin cake is served.

"The natives close program with *God Save the King* played on a crudely made instrument that looks like a xylophone."

"Saw native rickshaw boys dressed in fantastic feathers and beads. Head dress of animal's horns, beads."



"N DEBELE — pronounced En da be Lee — designs.
Very colorful — much red, white and blue."

"Some natives dressed in a tobacco brown blanket — which is often draped assymetrically."

ADINKIRA HENE — The Adinkira King

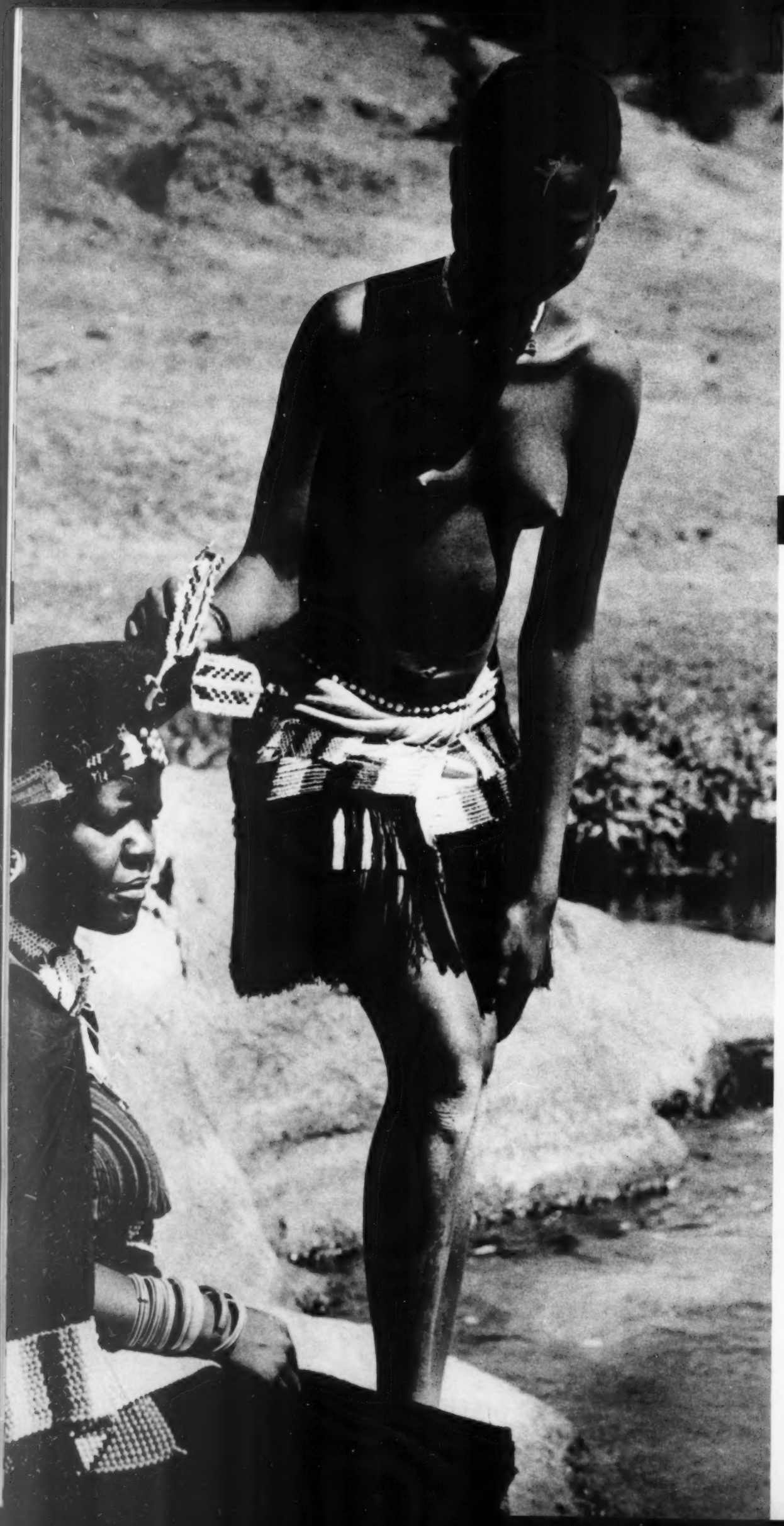
A swimsuit in Everglaze denim with trunks and fitted bra. Heavy braid and passementerie embroidery on square-cut jacket are inspired by jacket of a Hausa boy shown in background.

DWENINI ABEN — The ram's horns

OBI NKA OBIE — I offend no one without a cause

The Hausa swimsuit in Everglaze cotton embroidered in rich yellow gold, by Hollander. This was inspired by Hausa robes worn by the Mohammedan men in the Gold Coast of Africa.

NYAME DUA — An altar to the Sky God

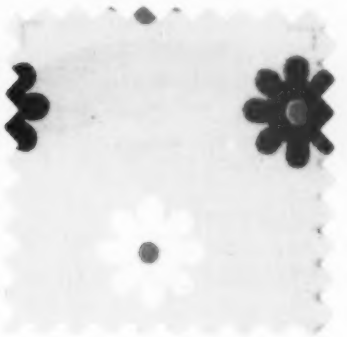


AFRICAN NOTEBOOK . . .

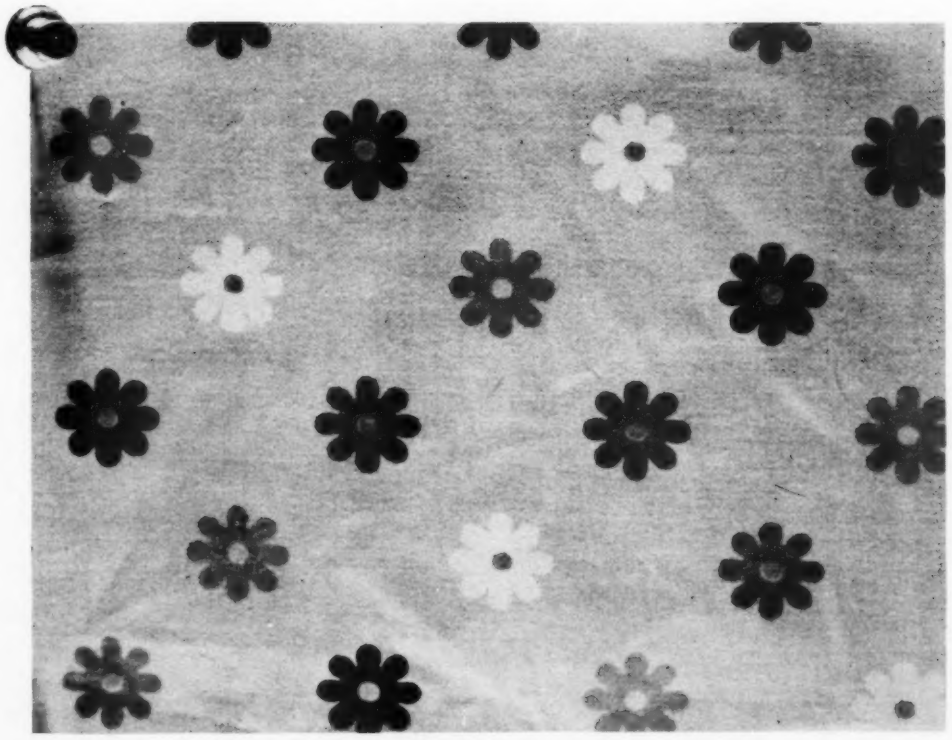
XUM

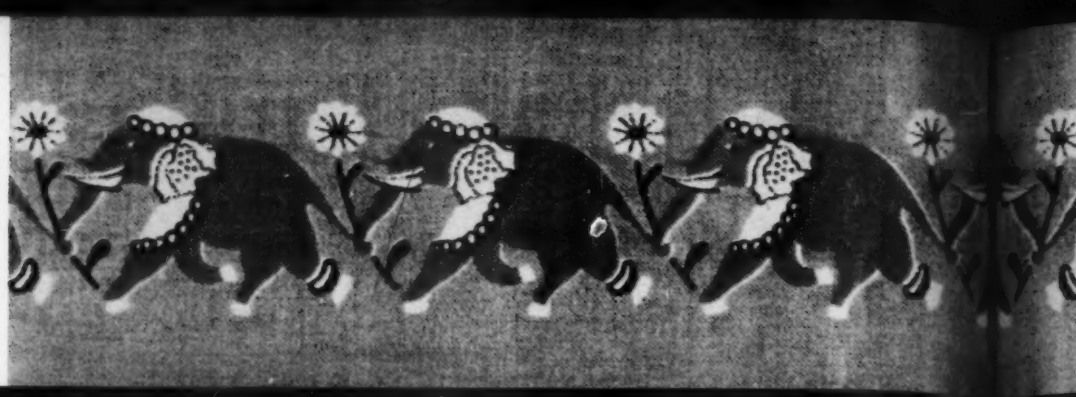
At left: Dress with generously pleated flounce is inspired by over-bodices worn by native women in open-air markets of the Gold Coast. The dress has square-cut neckline with tiny cap sleeves, perky corner bow.

Below: Swimsuit with black waistband trunks, fitted bra top. Unusual front and back pleated jacket with wide round collar and balloon sleeves inspired by overblouse worn by native women of the Gold Coast.



African Daisies. Fresh color and original design are accentuated in this smooth easy-to-care-for Everglaze cotton by AMERITEX.





Durban

"Wonderful flowers — flamboyant poinsettias (even pink and white ones), bougainvillea, morning glories, jacaranda (not in bloom).

"Frangysanni flower
black
cream color

"Many houses Tudor style

"Banana plantations

"Kraal (pronounced Krow-l) — a group of huts with a chief. Natives pay a hut tax to government."

Valley of a Thousand Hills Zulu Reserve

"Zulu — brilliant turquoise
Red-bright-yellow red also brick red
combined with black and white

"Chief and Sub-Chief wore longi-khaki woolen shirts.

"More colors — blue — blue-and-green —blue-fuchsia — blue-mimosa — white bead work.

"Children line up along road — stamping feet rhythmically as if performing a war dance to attract attention for money or sweets."

N Debele

"Band of white beading around blanket which is worn as a shawl.

"Houses painted with dirt paints on whitewash surfaces. The women of the family must do this and they must have the design in their heads and then produce results on their buildings.

"Natives paint buildings with earth paints that they mix with cow dung.

"Many of the ornaments are phallic.

"They barter small lump of clay for a large pot of grain. (About 25 miles away from N Debele they have green clay which the natives love.)

* * *

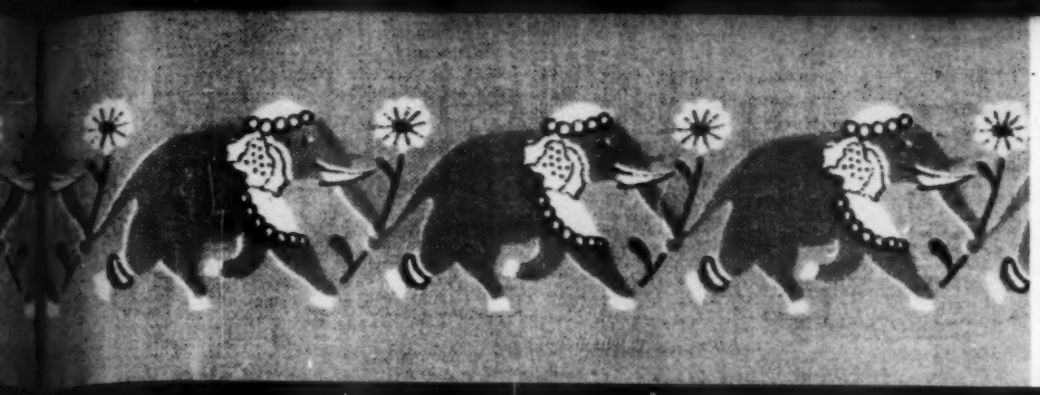
"If a servant wants an increase in pay it's quite the custom for him to engage a public stenographer to write a letter to his employer to plead his case. This routine might cost the African almost a full day's pay.

"Natives' main food is a concoction made

One-piece swimsuit in a clear rich green. Stylized elephants are embroidered on the set-in elasticized

The torso swimsuit in one piece with a hipline turn-up cuff tying in a saucy self-bow over the left hip. The

XUM



Another approach to the vogue for prints . . . the gentlest of elephants concisely queued up in true pachyderm fashion. A stylewise Everglaze cotton by AMERITEX.

from yam and plantain (something like a banana) mashed into doughy consistency and dipped into a stew-like concoction made of pig's feet, dry fish, pepper, etc., called Palava soup."

Accra

"Visited assembly — debate going on — men in European dress, some in costumes like a toga of printed 'mommy cloth' which is made in London or Holland to native specifications. Some wore smocks of striped, coarse material.

"Men are given first names — the days of the week:

Kofi (pronounced Ko fee) — Friday

"Visited community center — exhibit of Kente cloths, hand-woven fabrics — almost Guatemalan in appearance.

"Dyes are native — made from leaves of mango or African pear like avocado.

"Impressed by Mohammedan — *Hausa* — men's and boys' costumes.

"Bought imitation *Aggrex* (agg ree) beads. Original ones are part of their religious beliefs.

"Claim to culture that doesn't really exist.

"Women's costumes:

1. Empire — printed cotton dress . . . necklines vary . . . sometimes oval, sometimes square . . . sleeve often short puff or ruffled cap.
2. Skirt — ankle length of same printed fabric as top . . . often not the same . . . just draped around and tied with string.
3. A shorter skirt length draped around body of same material . . . often used as a baby carrier.

"Very colorful market with usual smells:

No. 1 color seemed to be orange
Lots of black and white
Lots of orange and blond
red and black
pea green and orange
black-white stripes, etc.

"Must bargain at market. Stripped one native of elephant-embroidered blouse.

"Cocktail party — native servant struggling with ice-tongs. Used his hand when no one was looking." *(please turn)*

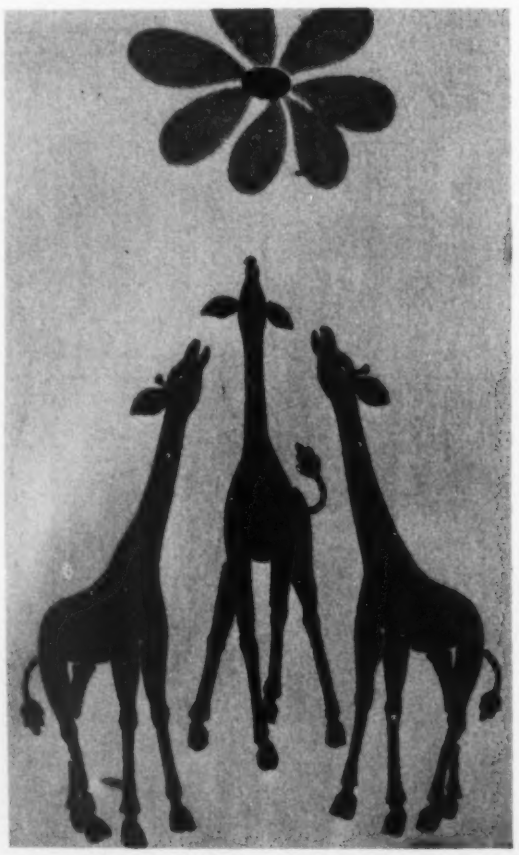
One-piece dress with interpretation of a native woman's bodice with tiny puffed sleeves. The beautiful

Market Shirt in white cotton, embroidered in an elephant motif, is a translation of one bought from a

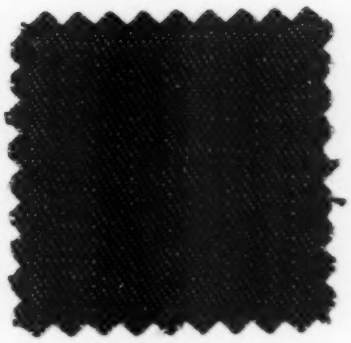
XUM

Typical square-neck dress translated from the woman's bodice neckline as seen in the markets of the Gold Coast, in giraffe and daisy print.

Carolyn Schnurer's two-piece swimsuit with pull-over baby jacket illustrates new silhouette inspired by bountiful bodices worn by the native women of the Gold Coast.

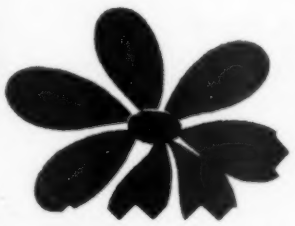


A band-box cotton with never-ending charm. A Kudu (African antelope) print in Everglaze by FULLER FABRICS.

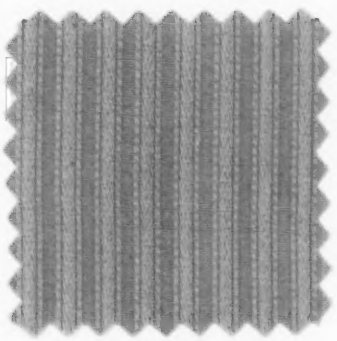


IRWIN's Everglaze Funwear, a fashion-conscious denim in a comfortable weight suitable for all types of sportswear for year-round wear.

The subtle colors of an African sunset are interpreted in this contemporary Everglaze hand-screened cotton batiste by S. EDWARDS COMPANY.

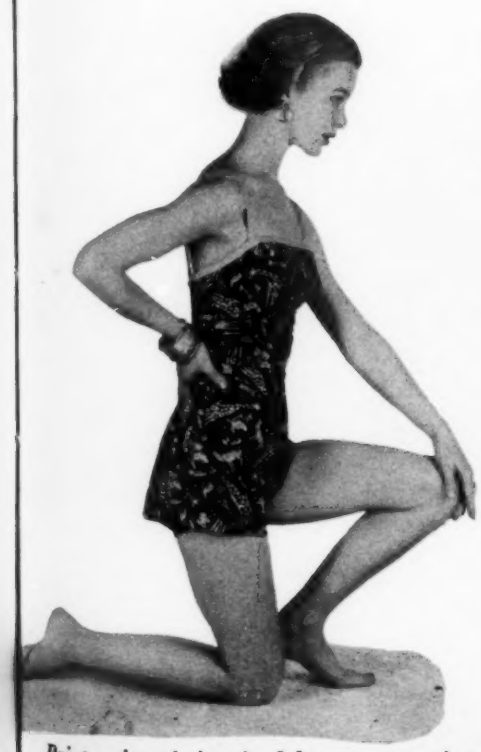


A well balanced giraffe print with distinctive character. From the collection of Buty-Chyne Everglaze cottons by ARTHUR BEIR & CO.



A lustrous self-stripe woven for interesting surface contrast. A J. P. STEVENS cotton with all the inherent Everglaze qualities.

An imported pattern design is transferred into a carved satin with the shimmer and texture of matelassé. A *Soap 'n' Water* Everglaze fabric by CROWN.



Print swimsuit inspired by a group of primitive wood carvings seen on the Gold Coast in Mam Pong in Akwapim.

XUM

Mampong in Akwapin

"Met Dr. Oku Ampofo — a medical doctor whose hobby is sculpturing. His great grandfather introduced cocoa to the Gold Coast. Saw examples of his wood carving done in wonderful ebony and other African woods.

"As we drove to Mampong, the vegetation changed and became more tropical."

Kumose

"Drove to College of Technology — a training school for teachers.

"Toilet called *Thunder Box*. Wooden — no flushing — just shovel on sawdust after due process.

"*Spend a penny* — go to the toilet.

"Went to huge open market — swarming with people — *N.T.* or Moslems or Hausa are most colorful — have beautiful embroideries.

"Women wear bright dark or subtle dark prints — very batik-like. Sometimes they wear a clear black and white print or a bayadere or a big yellow and blue plaid.

"The ones that looked the prettiest had borders. The better quality prints came from Holland but are made to native specifications and designs.

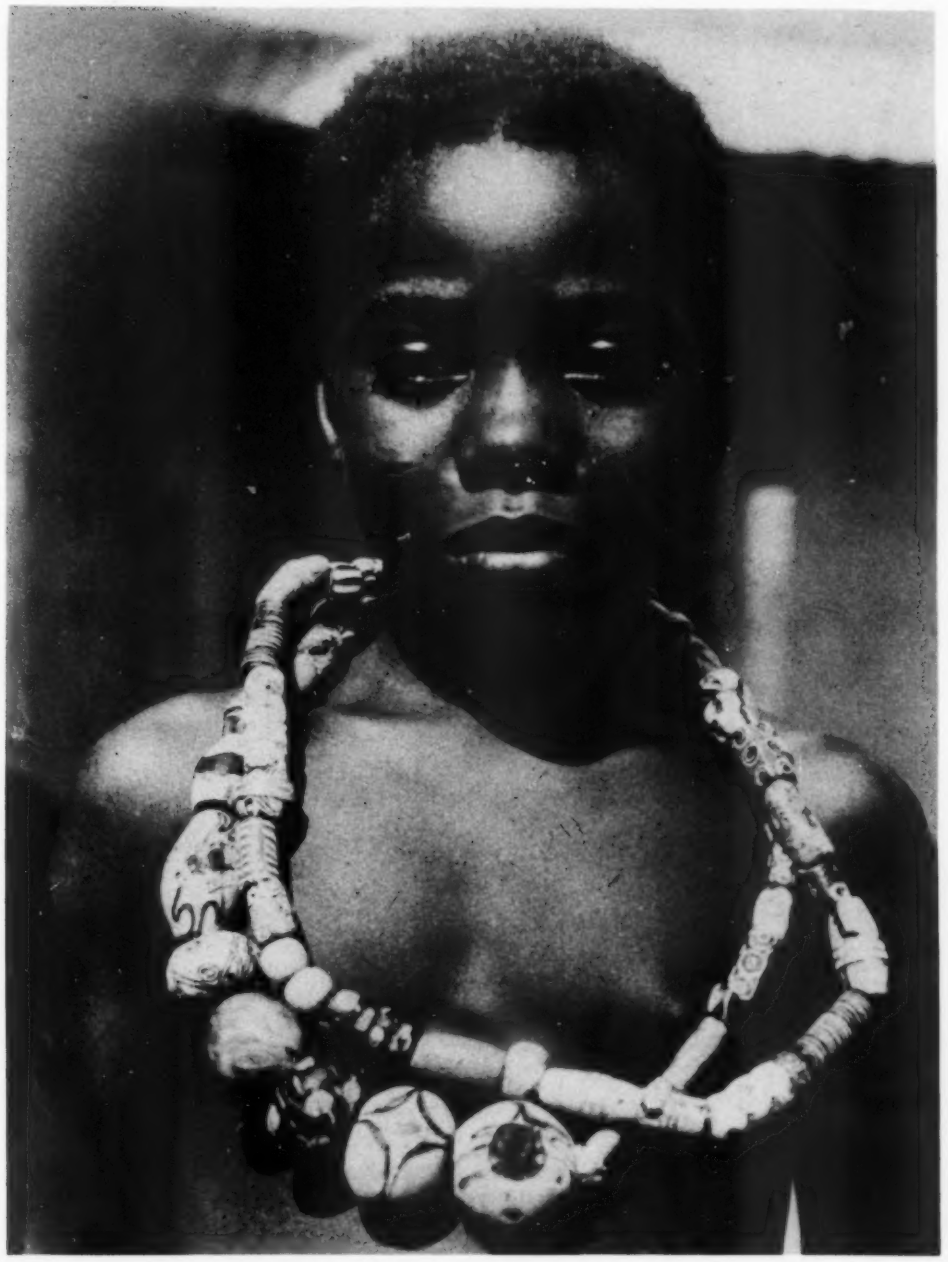
Colors:

1. Orange most important
2. Blue-blue and green-blue together
3. Urn red and orange red
4. Pink and red
5. Blue — blue and bottle green
6. Black and white
7. Indigo blue

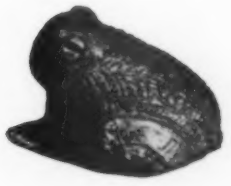
"Visited an old native who sold me African gold weights.

"Little girls wear double strand of colored beads about two inches below waist to indicate they are female."

Strawcloth in Everglaze that looks like straw, and is the color of straw but washes easily, embroidered in rich orange design with black tracery representative of an African geometric design. The dress is sleeveless, with orange leather belt and flared skirt.



Bulky beads and tiny brass objects which are used as ornaments in the Gold Coast were in many cases originally connected with religious beliefs and customs.



Contemporary brass ornaments from the Gold Coast.

AFRICAN NOTEBOOK . . . *concluded*

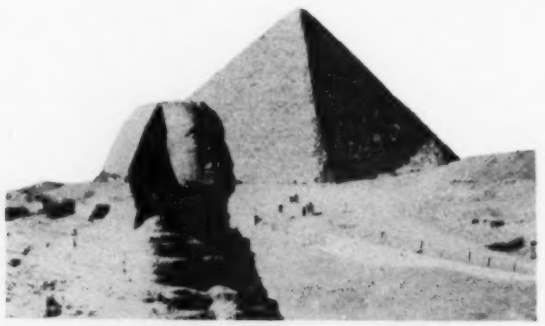
Works of art that are scattered about the world and in an unfamiliar style — as Malraux has pointed out — invariably call forth negative reactions. Negro art has been regarded for not a few centuries as the work of artists and sculptors who were ignorant and did not know the first thing about their craft, and their art has entered our culture piecemeal, by devious ways.

Today we have come to see these same unfamiliar manifestations of life and art as a refreshing fountain, whether it wells from the primitive earth or descends in an unbroken cascade of tradition through the centuries. Our everyday life, confined closely within its economic and physical limitations, demands this refreshment from the arts and cries out aloud for beauty in everyday things.

It is the privilege of the leaders in the American Textile Industry, whether designers, manufacturers, converters or mills, to organize their resources and to reach out to the four corners of the world to gather elements of value to our own domestic economy and way of living. It is the privilege, too, of outstanding designers like Carolyn Schnurer and retailers like Peck and Peck to carry to the logical conclusion this praiseworthy effort.

— THE EDITORS

Empire State Building in present day New York.



Sphinx and Pyramid, link between past and present.

Mr. A. Wells Peck, President of Peck and Peck, who has given notable support to design and promotion.

All fashion photographs in this section by Jane Arnold; others, courtesy South African Tourist Corporation.

MUSEUM

XUM

The morning glory climbs above my head,
Pale flowers of white and purple, blue and red.
I am disquieted.

Down in the withered grasses something stirred
I thought it was his footfall that I heard.
Then a grasshopper chirred.

I climbed the hill just as the new moon showed,
I saw him coming on the southern road.
My heart lays down its load.

The swallows take their flight
Across the ford.
My lady goes from sight;
And I must bring her on her way,
Yet leave her ere the close of day,
So wills her lord.

The swallows take their flight,
Again they come.
My lady goes from sight;
And far must I escort her to the South,
From whence no spring-time wind nor summer drouth
Shall bring her home.

I saw the marsh with rushes dank and green,
And deep black pools beneath a sunset sky,
And lotus silver bright
Gleam on their blackness in the dying light,
As I passed by.

And all that night I saw as in a dream
Her fair face lifted up
Shine in the darkness like a lotus cup,
Snow-white against the deep black pool of night,
Till dawn was nigh.

CHINESE LYRICS, 12TH TO 7TH CENTURY B.C.
TRANSLATIONS BY HELEN WADDELL

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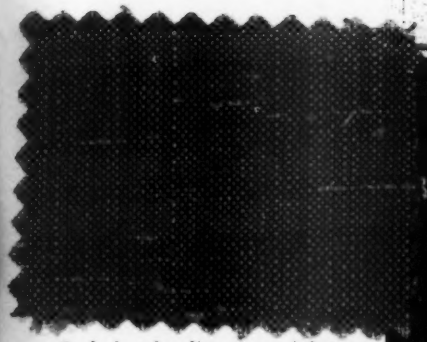
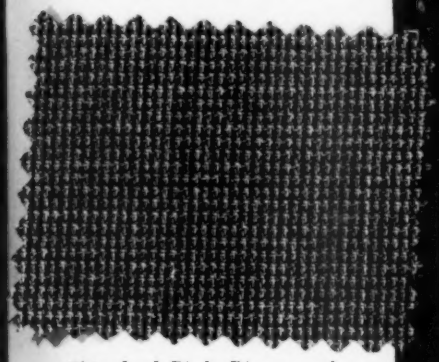
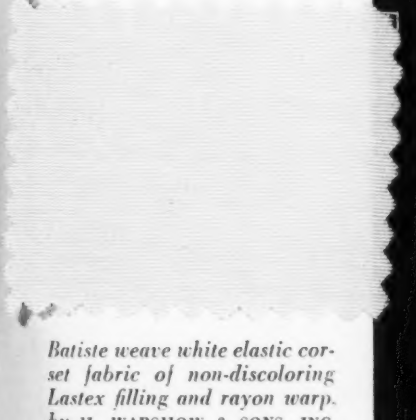


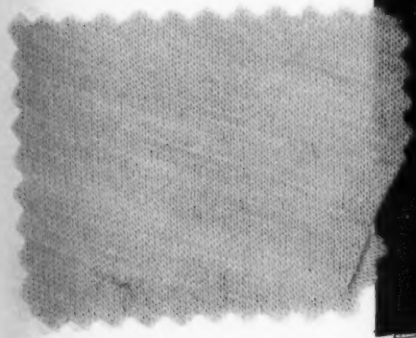
Ombré stripe linen-type fabric for suits and sportswear, 50/50 percent blend of acetate and rayon, by BURLINGTON MILLS.



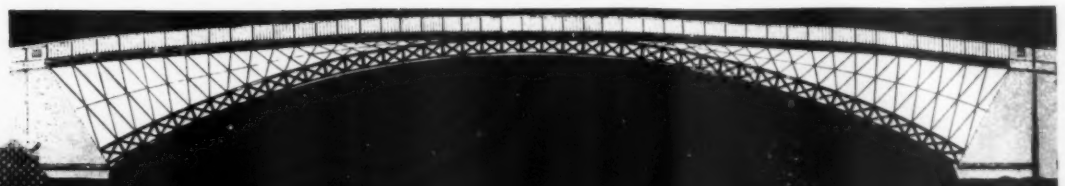
Chic check Pic 'n Pic weave for suits and sportswear. 50/50 percent blend of acetate and rayon, by BURLINGTON MILLS.



Batiste weave white elastic corset fabric of non-discoloring Lastex filling and rayon warp. by H. WARSHOW & SONS, INC.



Sag-No-Mor knitted fabric for blouses, dresses and sportswear. 50/50 percent wool and Vicara bleached fiber yarn, by I. A. WYNER & CO., INC.



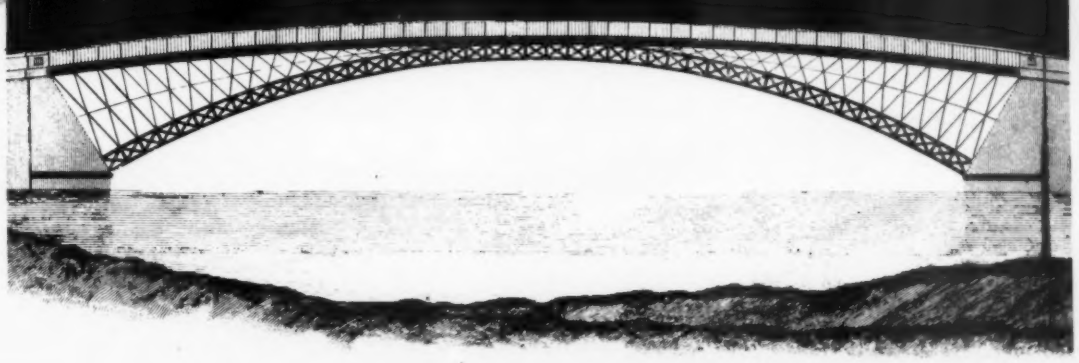
PROGRESS REPORT ON NEW FIBERS

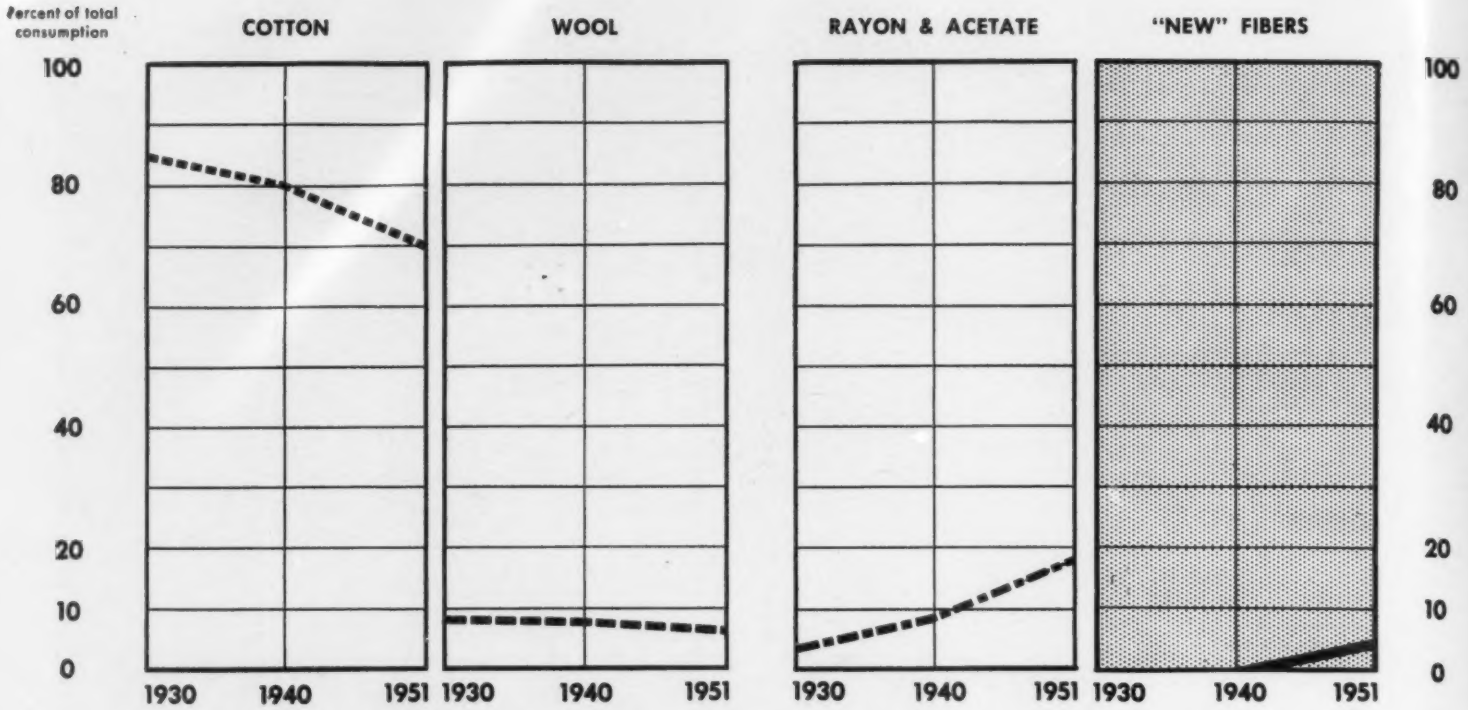
ENGINEERED TOWARD THE OBJECTIVES OF END-USE, TASTE AND PRICE FOR THE NEEDS OF THE MASS CONSUMER MARKETS AT HOME AND ABROAD.

To create a fabric it is necessary to start with the fibers. Spin the fibers and you have the yarns; weave or knit the yarns and you have the fabric.

It is the privilege of AMERICAN FABRICS to present another of its progress reports on current and significant developments based on the new fibers, together with their implications for merchandising from mill to consumer.

It is important to realize that new and improved fabrics are available today because of the development of new and different fibers by the chemist, physicist and creative men of our great source-material companies working in conjunction with the great minds and talents of the American textile industry.





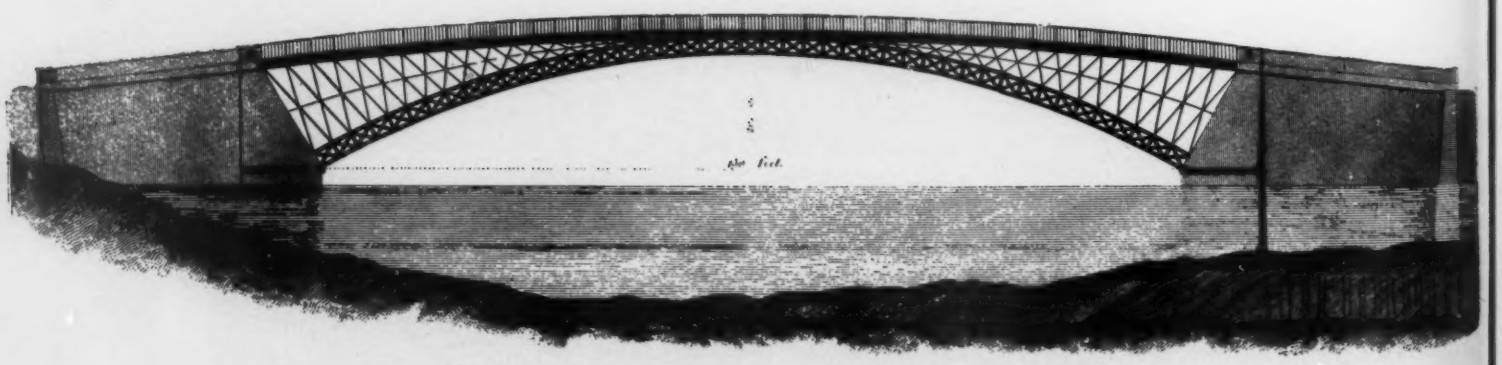
The man-made and synthetic fibers increased from 3.9 of total consumption in 1930 to 21.6 in 1951.

POINTS TO KEEP IN MIND

1. **All the man-made and synthetic fibers are primarily engineered to the requirements of an ever larger and larger portion of the volume markets in all textile fields.**

2. **The total man-made and synthetic consumption is still less than 25 percent of the total consumption of all fibers.**

3. **Of the total man-made and synthetic fibers consumed, 83 percent is rayon or acetate.**



RAYON AND ACETATE

One of the major retail trends today is the growing importance of merchandising of man-made fibers. In order to understand how rapidly the trend has developed, it is necessary to examine the facts of domestic consumption of fibers during the last twenty-one years. These show an increase in the use of man-made fibers from 118,800,000 pounds total consumption in 1930 to 1,486,300,000 pounds in 1951. The growth of the use of these fibers has been truly fantastic. In order to appreciate the situation, it is also necessary to visualize their probable trend and impact on the future.

It is estimated that the *new* *fibers will double their output of 210 million pounds in 1951, to reach an estimated total of 434 million pounds by the end of 1953. It is significant, in this connection, to note the fact that rayon and acetate will still form the backbone of the man-made fiber supply, with a total of 1444 million pounds estimated production for 1953, accounting for over 83% of the total man-made and synthetic fibers used.

Man-made fiber consumer goods consumption for 1952 is estimated at 26.8% of all fiber consumption. Realizing that throughout many departments in the average store man-made fiber merchandise dominates the inventory assortments, some of the leading mills supplying these goods, such as Burlington Mills, are seizing the opportunity to initiate nation-wide merchandising campaigns taking advantage of the trend. Leaders in the field realize that in spite of public demand, inspired in many cases prematurely, fiber facts and claims do not necessarily mean fabric facts and properties, and that the public will be best served in the present phase by concentrating on further popularization of acetate and rayon for mass merchandising, featuring the *new* fibers in item promotions.

**Nylon, Orlon, Dacron, Dynel, Vicara, Acrilan, etc.*

For some striking examples of new rayon and acetate suitings, turn to previous page, 57.

AMERICAN BEMBERG

Among recent developments in the cuprammonium rayon picture has been the development by American Bemberg of staple fiber, from which is being spun among other yarns an interesting, slubby type, giving possibilities for new and improved fabrics.

Bemberg staple fiber is now being produced in deniers which range from 1½ to 15. The finer deniers, up to 3, are suitable for yarns for the apparel field, while the medium and heavy deniers, 5 to 15, are suitable for blankets, drapery and upholstery fabrics, and for carpet yarns.

The crimp in Bemberg staple is natural, not machine made, and a good part of it is retained in the finished merchandise, thereby giving additional bulk and covering power. The resiliency and dye affinity are excellent. Fabrics made with Bemberg rayon staple possess good draping qualities and washability.

This fiber has a natural dull luster, and since no delustering agent is used, the cutting action on the spinning machine is minimized.

Bemberg staple can be processed on conventional cotton machinery without any change in the settings used for viscose rayon staple. By virtue of the fact that Bemberg has exceptionally good absorbency, it is an ideal yarn to be used in blends with hydrophobic synthetics. When mixed with acetate, nylon and some newer synthetic fibers, it can be used to advantage to obtain cross-dye effects.

Bemberg rayon staple is likely to play an important part in the suiting, skirt and slack fabric field. Fabrics in solid shades of a blend of viscose and Bemberg staple, with the use of one dye-stuff, have resulted in very good union dyes instead of two-tone effects. An unusual degree of resiliency has also been observed in fabrics of such a blend. An added feature of this blend consists of the possibility of achieving a dischargeable print.

Bemberg staple can be obtained in two types; namely, the cotton-like staple which has a relatively smooth surface, and the wool-like staple which has a surface comparable to the animal fibers. Very attractive flannels combining Bemberg and acetate staple have been developed.

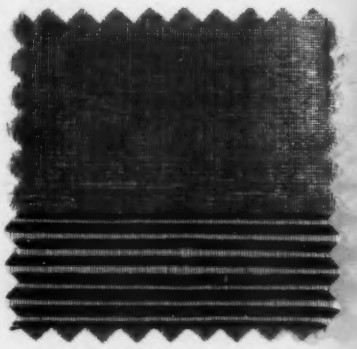
Bemberg slubby yarn is obtainable in deniers ranging from 75 to 800. The character of the slubby yarn can be varied at will, in the spinning.

The fabric uses for slubby yarn are numerous. Large quantities of this yarn have been used during the past season in acetate warps with skein-dyed Bemberg slubby yarn filling, for iridescent taffetas. This will be followed up for the coming season with dope-dyed acetate warps and skein-dyed Bemberg slubby yarn filling, as well as piece-dyed iridescent taffetas.

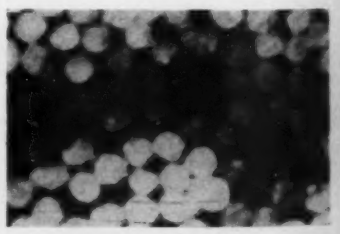
Wherever a shantung character or any new surface interest of the silk douppioni type is desired, the slubby yarn meets this requirement. For the time being, the yarn is used exclusively as filling yarn and, as such, has been used in warps of silk, acetate, viscose rayon, nylon and the newer synthetic fibers; also as a filling in viscose rayon warps. An attractive fabric is obtained by using this yarn as a filling in Bemberg triple sheer warps, for printing purposes. Additional uses for this yarn are in curtain, drapery and upholstery fabrics, as well as necktie fabrics.

E N G I N E E

TOWARD THE NEEDS OF VOLUME MA VERY PHAS



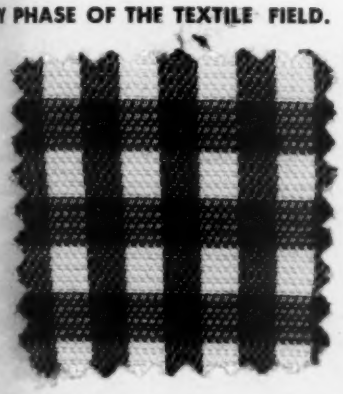
Silk plus a new Bemberg yarn called Syntussa gives this fabric the thick-and-thin shantung character. By COHAMA.



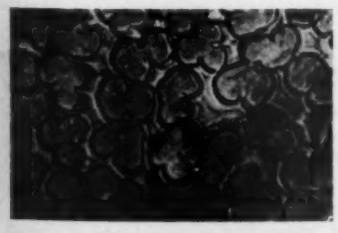
SECTION OF BEMBERG FIBER

N E R E D

MA VERY PHASE OF THE TEXTILE FIELD.



Elasticized Beer-garden Check swimsuit fabric of Chromspun acetate and Estron acetate warp. By CONTEMPORA FABRICS.



SECTION OF CHROMSPUN FIBER

CHROMSPUN

Since Chromspun was introduced by the Tennessee Eastman Company, its application in the apparel and decorative fields has been extending. Among the latest reported is its use in a wide range of swimwear where color fastness is of superlative importance.

Chromspun, color-locked fiber, was first introduced in the form of a black yarn which, woven into fabric, immediately moved into an historic role when the U. S. Navy adopted it for making the traditional black neckerchief of the seaman's uniform. Fabric woven from Chromspun was selected because it was found to outlast in color fastness any of the fabrics which had been available during more than a century of the uniform's use.

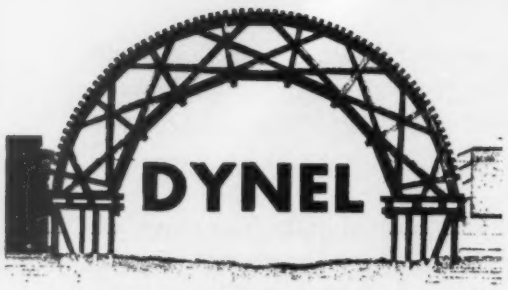
Developed recently in many fields where non-fading fabrics are at a premium, the fiber has been used in decorative fabrics for draperies, slip covers and domestic applications where gas-fading, constant laundering or severe exposure to sunlight are prevalent. The art of "chromspinning" yarns in a wide range of shades, pure and blended, has been largely mastered, and application in every kind of decorative scheme has thus become possible.

Now Chromspun yarns have once more entered a field where seaworthiness is the first consideration — in a distinctive collection of plain and patterned elasticized fabrics for the swimwear trade, shown in leading manufacturers' resort lines. For example, Catalina, Inc. are showing a two-piece swimsuit with boxer shorts in heathertone denim which combines a Chromspun acetate warp with an undyed, cotton-wrapped latex filling. This comes in red, royal, brown and white. The fabric, made by Hafner, is confined to the one manufacturer. Caltex of California use the *whitecap-ripple-stripe* elasticized fabric of Chromspun acetate warp with cotton-wrapped latex filling (eyelet decoration in undyed nylon) to make a one-piece maillot suit. This is available in red, green, navy, brown and black with white eyelet stripe. Cole of California is showing a one-piece maillot in a bold checked elasticized fabric of Chromspun and Estron acetate warp and cotton-wrapped latex filling, also confined to the one manufacturer — Contempora Fabrics — in red, royal and green with white. A tropical worsted-type denim made by Kanmak division of Artistic Foundations is offered in *Seamolds* by Flexees in a one-piece maillot or a two-piece suit with inset trim on bra and shorts.

Chromspun is particularly valuable in the swimwear field by reason of its immunity to salt or chlorine in water, to sunlight or atmospheric gases, to perspiration hazards, and to detergent and bleaching agents. To these immunities are added acetate's advantages of fast drying, resistance to mildew, soil and deterioration. This innovation represents a new advance in scientific engineering of new fabrics to meet the specific end-use requirements of the manufacturer, retailer and customer.

(please turn)

XUM



The gregarious, smooth blending and resilient qualities of Union Carbon and Carbide's salt-and-air fiber are bringing increased recognition by leading designers for a variety of uses in the industrial field.

QUALITIES DYNEL ADDS TO BLENDS

With Rayon and Acetate: **25% to 30% of Dynel increases strength, shape-retention and wear life; increases abrasion-resistance without causing pilling; gives greater loft and wrinkle-recovery, shape retention even when wet, and provides warmth without bulk.**

With Cotton: **From 25% to 50% of Dynel retains the original loft and warmth of blends after repeated washing; helps stabilize the cotton to laundry shrinkage; greatly improves the wrinkle-resistance of blends; holds shape when wet or damp.**

With Wool: **15% adds considerably to the strength of woolens and worsteds, increasing wear and tear-strength, decreasing pilling. 40% Dynel imparts washability, wrinkle-resistance, low shrinkage, and shape-retention after washing, with warmth and hand.**

Foremost among new Dynel uses developed in recent months have been the pile and fleece fabrics that take advantage of Dynel's extraordinary compressional resilience under all conditions. Deep pile fabrics are continuing to advance in fashion and apparel use; for military uses also they are being specified, where they conform to rigid service requirements.

In the apparel field blends of Dynel-cotton-nylon have been outstanding fashion successes in women's dresses and suitings, with appealing surfaces, good wear in the most adverse conditions, washability and styling in exciting feminine colors. The warmth-without-bulk asset gives Dynel a strong commercial potential with manufacturers for year-round use.

Blends with rayon and with rayon and acetate are now appearing on the market from a large number of mills and converters. These blends are increasingly used in young men's and boys' suits and slacks because they retain shape and crease when wet, do not shrink or stretch, and are unaffected by dry cleaning solvents. The Dynel component gives these garments lightweight warmth, soft, tweedy appearance and texture, and yet allows smart styling and colors.

In military fabrics, a 15% Dynel-wool kersey and a Dynel-wool shirting for Marine Corps uniforms have met rigorous service specifications.

In sleeping garments and underwear for infants and children, men and women, Dynel-cotton blends have been used effectively by several manufacturers. E-Z Mills, for example, uses a 50-50% blend which has a gentle hand and is extremely strong and warm with minimum bulk. In addition to contributing hand, warmth, shrink- and stretch-resistance and quick-drying to the garments, Dynel also adds permanent resilience, which retains the loft of the fabric through successive launderings and, if anything, seems to improve the hand and warmth after washing. In Dynel-cotton combinations the absorbency of cotton coupled with Dynel's softness and wear values, makes a partnership which has been described as *children-proof.*

These values, it is believed, need only sales promotion to place them high on the list of consumer demands. Carbide's promotional staff is presently, in cooperation with manufacturers, making sales demonstration materials ready for retail outlets to initiate customer and salesman alike to the use-plus-drama inherent in the new fiber.

The domestic market for this fiber is of unusual promise. In addition to their washability, Dynel domestic fabrics bring safety in the fiber's fire-resistance which makes it shrink away from the source of the flame. This quality made Dynel the choice in decorating the United States Lines' queenship, the S.S. United States which, because of possible future use as a troopship, had to meet exacting U. S. Coast Guard standards.

The fire-resistance of Dynel draperies is its first drawing card for most designers. For public places, leading restaurants, hotels and other institutions, Dynel's fire-resistance, its combination of hand with good launderability and wear, give it an appeal that includes safety, economy and esthetics.

The Prince George Hotel in New York City recently conducted a laundering test of bedspreads made of a Dynel-nylon-cotton blend by Bates. When last reported by the hotel's head housekeeper, the bedspreads had been laundered over 100 times with *absolutely no deterioration* of dimension, color or hand. In fact, it was reported, the spreads even tend to fluff better after numerous launderings! Marie Nichols, New York decorator, has outfitted the Museum of Modern Art with all-Dynel net draperies, chosen for launderability, wear and unusual beauty.

An additional value for institutions, as well as for home users of Dynel fabrics, is that inherent resistance to acid, alkali, moths and mildew facilitates storage and storage economy.

In the industrial field, Dynel fabrics have scored a long list of successes. Typical are dust fume bags and filter cloths of all-Dynel or Dynel blends, which provide longer life and operating economies. The fiber's strength, wet or dry, and its high resistance to acids and alkalis are prime advantages for industrial uses.

These same properties, plus high abrasion-resistance, have made it popular in the work clothes field. Burlington, Susquehanna and Wellington Sears have produced rugged Dynel fabrics which are being used by Chem-Wear, Oberman, Milburn, Elm and Mine Safety Appliances for chemically-resistant clothing.

The paint roller business is a new and rapidly expanding field. Dynel covers are now in use on over 6,000,000 paint rollers used both in homes and in industry. Dynel pile fabric applies any type of paint, gives extra life, cleans readily.

While it is still undergoing extensive experimentation by mills throughout the country, enough finished products will begin to appear this season to indicate that much wider national consumer impact is not too far away.

A jersey fabric by Princeton of Dynel-rayon-wool has been put into use by Frances Sider in her *Sun Body* resort dresses and stoles and *Beach Goddess* swim ensembles and by Adrian Tabin in dresses. Featuring durable pleats, quick-drying washability with negligible shrinkage and little ironing required even for pleating, these worsted-like fabrics in a variety of colors should find warm weather popularity in smart wardrobes.

A Bates' challis of Dynel, combed cotton and nylon, combining easy care and long wear features with the hand of a costly Swiss import, has appeared in dresses, blouses and skirts by Anne Fogarty of the Arkay group, Toni Owen and David Crystal.

The Princeton and the Bates garments are all priced at a scale to catch the interest of the economy-minded shopper. More luxury-priced is a Dynel-Vicara blend in jersey by Heller, converted to a cocktail sweater-blouse by Stella Wanfrid. The blouse has a cashmere touch enhanced by the wear values of Dynel and is offered in an appealing range of pastel shades. The same soft jersey fabric is being made into dresses by Debby of California.

Among the season's blends soon to appear are several by Fox-Wells, including flannels, gabardines, fleeces, bengalines and novelty fabrics. *(please turn)*

Dynel fish net draperies designed by Marie Nichols hang in the Penthouse Restaurant at the Museum of Modern Art.

PHOTO HANS NAMUTH

NYLON, DACRON, ORLON

It is readily apparent that fibers such as nylon, Orlon and Dacron are having a tremendous effect on the American way of life. Aided by continued fiber research, customer assistance, and a well-conceived program of advertising and promotion, it is certain that their future will be brilliant.

Closely allied with the increasing demand for fabrics made of nylon, Orlon acrylic fiber and Dacron polyester fiber is the American concept of modern living — living that is fluid, functional, and practical. Designed for ease of living, these new fibers are inevitably becoming more important to the textile industry. It can be safely predicted that within a few years, as the supply becomes more plentiful, a large percentage of all fabrics will contain these new fibers.

That these fibers are in keeping with the trends of modern living is evidenced by the properties which they contribute to all types of fabric. Such desirable features are strength with light weight, and resistance to damage from moths, mildew, sunlight, heat and perspiration. Added to these values is the fact that many fabrics made of these fibers are easily washable and need little or no ironing.

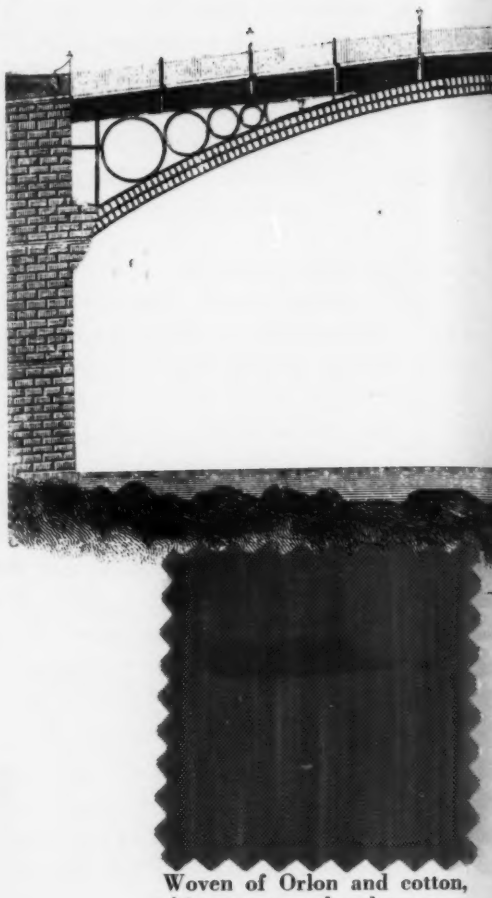
Convinced that nylon, Orlon and Dacron will improve America's textile living, Du Pont, although not a producer of fabrics or apparel, is nonetheless aware that to be successful a program must encompass more than production and sale of fibers. Realizing that for maximum efficiency and utility it is important that everyone, from the spinner and weaver to the cutter and consumer, knows and understands the properties of these fibers and their ultimate end uses, the company's Textile Fibers Department has amassed what may well be the greatest textile merchandising team in the nation's history.

Keystone of this program, of course, is production of the new synthetics. Nylon first made its commercial appearance in ladies' hosiery in May, 1940, and except for the war years when production was diverted for military purposes, it has experienced a sensational growth in the textile fields. So great has been the demand for nylon in apparel, home furnishings and industrial uses that even now the demand exceeds the fiber supply, despite tremendous increases in productive capacity in the last five years.

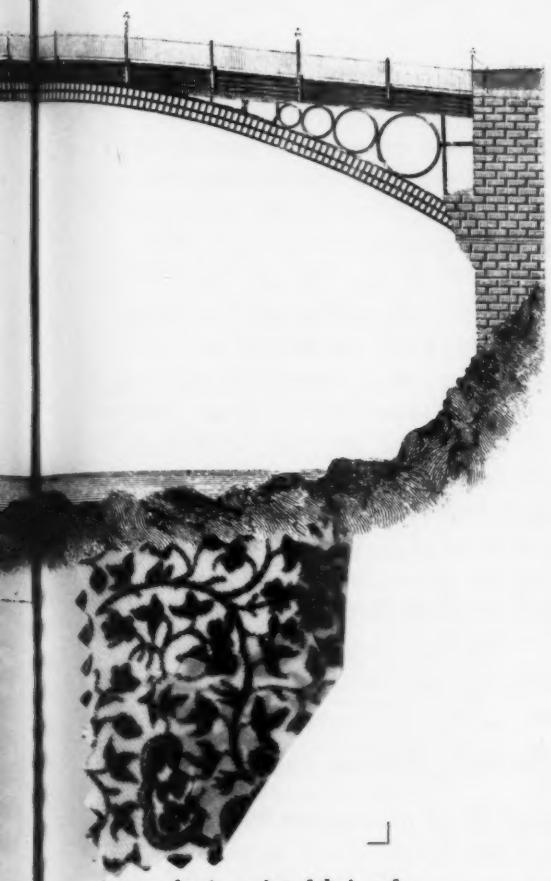
Orlon, because of its superior bulk, permits production of lighter weight goods that are warm, strong and durable. Orlon staple has an extremely pleasing hand, warm, soft, and full . . . the Orlon hand. It has resilience, exceptional wrinkle-recovery and, because it is virtually insensitive to moisture, it has remarkable dimensional stability. These are some of the values which provide the ease-of-care characteristics that are becoming more and more important to consumers. To produce this new acrylic fiber, Du Pont has built plants at Camden, S. C., with an annual capacity of 6,500,000 pounds of filament yarn and 30,000,000 pounds of staple. It is expected that these will be in full production in the very near future.

Newest of Du Pont's synthetics is Dacron, and proof of the company's confidence in its polyester fiber is evidenced by the fact that an initial manufacturing plant is being built at Kinston, N. C., at a cost approximating $40,000,000. When full production starts in 1953, this unit will manufacture approximately 10,000,000 pounds of filament and 25,000,000 pounds of staple per year.

Markets for Dacron include sweaters, socks, sport shirts, upholstery fabrics and dresses, but the largest market, present indications suggest, will be found in the field of men's and women's suitings. Because of outstanding properties, such as wet and dry crease-retention, high stretch-resistance, strength and ease of care, Dacron is in great demand both by the industry and the consumer, the great



Woven of Orlon and cotton, this EVERGLAZE chambray combines complete practicality with luxurious hand.



A new basic print fabric of 100% Dacron that captures the classic spirit of silk. By GOODMAN AND THEISE.

majority of whom have expressed complete satisfaction with apparel produced thus far.

Continuing fiber research indicates that product improvement will not cease until each of the new fibers is the best that can possibly be produced. Nylon, Orlon and Dacron were selected for commercialization because they were the best of literally thousands of synthetic polymers developed and evaluated in the laboratory. They passed the most careful scrutiny because they combined the greatest number of values with the fewest deficiencies. It is true that, like all fibers, the synthetics have deficiencies, but because they are made by man they can be improved by man, and continued fiber research is almost certain to eliminate most of the few minor disadvantages.

Included among the problems presented by the newer synthetics is low electrical conductivity (low moisture content), the cause of static problems, particularly in *100% fabrics* designed for winter use. This condition may be overcome by the use of blends and by the use of anti-static agents in dry cleaning fluid or rinsing water. Another approach now under investigation in the laboratory is the development of permanent anti-static agents.

Starting with rayon and then acetate, every new fiber has had its dyeing problems, and nylon, Orlon and Dacron have not been exceptions. A good job can and has been done, but the task of dyeing is by no means an easy one. Special dyeing techniques such as the use of selected dyeing agents, have proved satisfactory, and more recently the development of new pressure-dyeing procedures gives promise of solving most of the dyeing problems.

In order that the values of these new fibers be utilized to their best advantage, it is necessary that they be properly handled by the textile industry. With this in mind, Du Pont was among the first to estabish what is now known as Customer Service groups. A valuable member of the company's merchandising team, these groups do just what the name implies; cooperating with research and plant groups and the textile laboratory, the Customer Service representatives work with customers' mills in developing techniques for handling fabrics, dyeing, finishing, and the like.

The Fabric Development and Sales Development sections also play important roles in this program. Fabric development work is done on constructions to bring out the best properties of a fiber for a given end use. When this is done, and a fabric is obtained which it is believed has a good basis for commencing work in a particular field of interest whether it be filtration, workclothing, sweaters or slacks, Sales Development takes over and follows the fabric through its particular end-use and field of interest.

Final phase of the merchandising program is centered around the Advertising, Promotion and Product Information sections whose responsibility it is to educate both the industry and the consumers in the values of the new fibers and at the same time to assist in speeding these improved products to the American public. These sections, which comprise the Advertising and Promotion division of the Textile Fibers Department, are charged with the preparation and distribution of descriptive literature designed to educate retail buying groups, sales people and consumers, as well as trade and consumer advertisers. Exhibits, displays and company-produced motion pictures also aid in carrying the fiber story to cutters, stores and the public. For the current year Du Pont has planned the most extensive campaign in the department's history.

To strengthen retail selling . . . the point where the product and the cash register meet . . . the company is now offering a limited retail training program which has been enthusiastically received wherever it has been given. Retail outlets are conscious of the promotional value of nylon, Orlon and Dacron, and from coast to coast they are using them as a basis for store-wide promotions. *(please turn)*

The trend which fabric development has followed during recent months, with respect to blends using Vicara as one component, is toward using higher percentages of Vicara. For example, one large jersey manufacturer, now in his third season of work with this fiber, has changed the composition of one of his fabrics from 65% wool - 35% Vicara to 50% wool - 50% Vicara. The new fabric has far softer hand, more interesting surface texture, drapes better and has somewhat better dimensional stability. It is also somewhat lower in cost per yard.

The same trend is evidenced in men's hose. One of the foremost producers of Vicara-nylon socks lately changed from a 50-50% blend to 65% Vicara-35% nylon. Here moisture absorbency, resiliency and lack of static are the inducements to larger percentages of Vicara. At the same time, it has been proven that 35% nylon is sufficient to give socks extremely long-wear life.

Men's wear fabrics and sports jacketing fabrics, particularly, show a trend toward higher percentages of Vicara. One is now in the making with 90% Vicara, 10% nylon. Another is of 78% Vicara, 22% relatively coarse wool. There is an unusual sports jacketing of 90% Vicara and 10% Orlon made by a leading mill which is also making fabrics for men's and women's suitings of 50% wool - 50% Vicara. This is the most conventional blend.

Turning to the more general characteristics of Vicara in blends with other fibers:

Vicara and wool: Vicara definitely upgrades wool, making possible a surface texture usually found only in expensive imported animal fibers. Men's suitings is a textile field where the luxurious hand of Vicara is steadily winning a welcome. In addition to the soft feel of Vicara, suitings made with this fiber have outstanding wrinkle-recovery and crease-resistance. Drapability is excellent. The newest suiting blend available at present is 50% wool - 50% Vicara, and independent testing indicates that the shape-retention is superior. Of course, the more Vicara in the blend, the better the suit will retain its size and shape.

The fact that Vicara drapes beautifully has made it a natural selection for jersey. The usual blend has been 50% Vicara - 50% wool.

In coatings, as little as 20% Vicara makes the texture remarkably soft, frequently causing the coat to sell *on touch*. An artful blending of Vicara, wool and mohair results in a rich texture and fluid drape. A blend of Vicara, wool and a small amount of nylon in sweaters has made astonishing headway among consumers. Here, the high compliance ratio of Vicara accounts for a mellowing softness — that is, the sweater washes and wears softer and softer, making the garment progressively more pleasant to feel and comfortable to wear.

Still in the field of animal fibers, mention must be made of the luxury and softness par excellence of a new Vicara-Vicuna blend. This is a fabulous combination — and a blend of Vicara and cashmere falls into the same category.

Vicara and nylon: Major men's hosiery manufacturers are delighted with this blend; a satisfactory one is 65% Vicara - 35% nylon. To the strength of the nylon,

VICARA

New and successfully selling blends of the zein fiber made by the Virginia-Carolina Corporation show a trend towards increasing Vicara content.

Vicara adds a cushioning softness and resiliency. Both of these properties, coupled with the ability of the Vicara body fiber to absorb large quantities of moisture, are important to the comfort of the wearer. These socks retain their good looks through innumerable washings and wearings. They also keep a neat, clean appearance when worn, since the high moisture absorption of Vicara tends to dissipate lint-gathering static. The end result is that Vicara keeps socks from feeling sticky and clinging unpleasantly to the feet; it minimizes the adherence of dirt and lint. Incidentally, the tendency of Vicara to dissipate static is equally advantageous in any item of apparel, and particularly in blends with the newer man-made fibers, where the moisture absorption is very low.

Vicara and rayon: Here again Vicara has proved to be very definitely the upgrading ingredient in a combination of fibers. In a new line of sports shirts, only 25% Vicara has greatly improved the wrinkle-recovery, crease-resistance and draping properties of an inexpensive fabric. Slacks containing rayon and Vicara have a texture usually found only in imported worsteds; the style effect is one of pure quality. Vicara has also brought hand and softness to a blanket fabric containing rayon and wool.

Vicara and cotton: Vicara contributes a bounce-back resilience to a cotton fabric that cotton alone does not provide. Sports shirts of Vicara and cotton — and sometimes rayon — look better and feel better. The quick penetration of Vicara in sportswear is a logical, expected development in a field where luxury and low cost are desired.

Vicara and other man-made fibers: The presence of Vicara in almost any blend of man-made fibers assures a soft, luxurious hand. The ability of Vicara to absorb moisture and dissipate static is becoming a valued extra in the textile industry. Some examples of new blends: Vicara and Orlon team together in both a woven and a knit fabric; a new flannel is a 4-way split between Vicara, rayon, wool and Acrilan. A soft, lofty blend for pile-type fabrics comprises Vicara and Dynel. Vicara, wool and nylon produce warm-but-light fleecy fabrics.

The biggest future fields for Vicara fiber will be in blends with acrylic fibers. The two types are so different in properties that they blend well and complement each other's capacities. We believe that in the very near future many such new blends will make their appearance. For example, a jersey of Vicara and Orlon will have the permanent pleatability contributed by Orlon and the strength and wear-life of Orlon plus the softness and texture of the Vicara, and both Orlon and Vicara are shrink-resistant and completely washable. Since both fibers are moth- and mildew-resistant, it will be a most serviceable fabric with luxuriousness of texture. Vicara adds high moisture absorbency which, in turn, contributes to wearing comfort and to dissipating static which prevents the gathering of lint.

Vicara is easier to dye than wool. Since Vicara is amenable to all wool dyes, blends of Vicara with acrylic fibers would not suffer disadvantages in dyeing sometimes associated with combinations of two man-made fibers.

The latest development of Vicara is in making the bleached fiber commercially available. Before this past year, Vicara was available only in a pale yellowish color. This made it difficult to obtain clear pastel shades unless it underwent bleaching first. Now that Vicara bleached fiber is available, fine pastel shades in all colors are readily obtained without previous bleaching of the goods.

By the fall of 1953, it is expected that Vicara will be well represented in every level of the world of fashion and apparel.

(please turn)

QUALITIES VICARA ADDS TO BLENDS

Vicara has adequate tensile strength, superior resilience and excellent elastic recovery.

Vicara improves the drape of the fabric and helps it to resist wrinkling and creasing. The wear-life of Vicara-wool blends, according to laboratory and field tests, is equal to all-wool fabrics.

Despite its luxurious softness, Vicara has sturdy strength. For example, blended fabrics containing Vicara have been found sufficiently durable to serve as upholstering cover in modern railway passenger cars.

For an example of the new bleached Vicara staple and wool jersey, turn to page 57.

HELANCA . . .

A New Type Of Nylon Yarn

Over the centuries, fabric and clothing designers have been confined to cloth which has two stable dimensions — vertical and horizontal. Then came rubber strands wound with yarn which made it possible to weave fabrics that stretched. In recent months there is a new development releasing nylon fabrics from stable dimensions, adding the quality of motion to stimulate design imagination.

Nylon yarn has been given the power to stretch as much as five times its length, and return. It is a soft stretch. It pulls out with ease and then lightly conforms to almost any shape which it surrounds. It surrounds, but does not hold.

For twenty years, Heberlein & Company of Switzerland had worked on a process that by theory would produce an elastic yarn through forming the filaments so that the formation (not the yarn) would extend and contract. The synthetic yarns of the early part of this period would not keep these formations; but nylon did, and the new product was named Helanca.

Micro-photographs of the yarn show the nylon expanded into a string of soft filaments that curl in all directions. Pull it tight, and it condenses into a strong solid line. Relax the tension, and it returns to its curls.

The process uses two yarns, one highly twisted to the right and one to the left. Combined, one counterbalances the twisting tendency of the other. The process is long and complicated. Twisting spindles turn the yarn at 10,000 revolutions a minute, or more. There are many parts to the process, and it takes 18 days, operating 24 hours a day, to process 1 pound of 70 denier nylon. Any size filament yarn can be used, so there are many sizes in yarns which will be available.

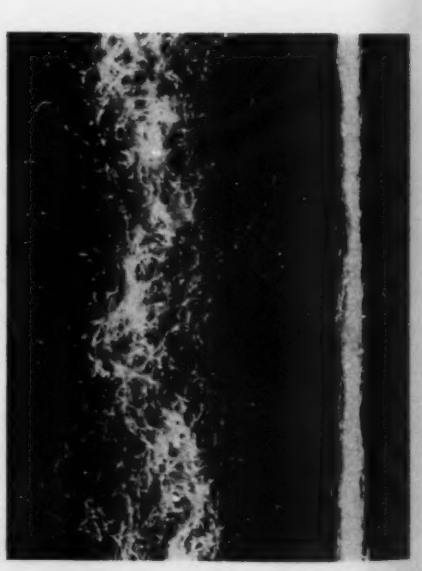
The first adaptation of this yarn was in France and Switzerland where men were amazed to find small socks that stretched to fit big feet, yet did not bind the foot because of the soft stretch characteristics of the yarn. Men found they wore well, and even in a country where money is watched closely customers were willing to pay more for such a comfortable, long-wearing sock.

Glove makers saw fabrics woven of the yarn, which stretched either horizontally or vertically, or could be adjusted to stretch in only one direction. Beautifully designed woven gloves that fitted large or small hands then began to appear in the best shops.

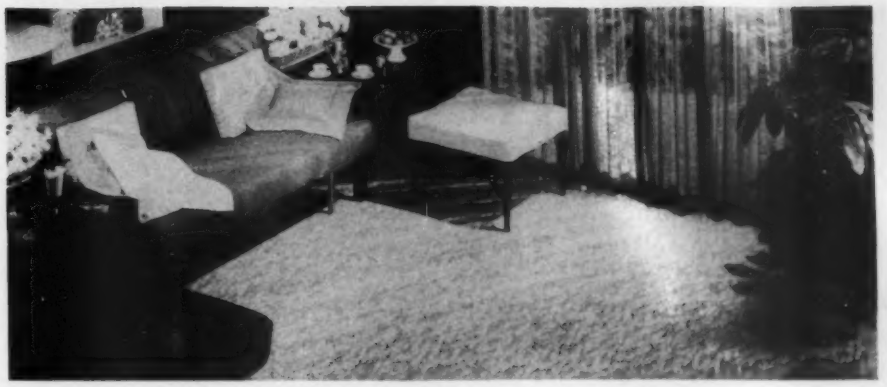
Helanca Yarn

Then sample socks came into the possession of The Duplan Corporation, processor of nylon for many of the largest hosiery knitters in the country. The stretching sock was intriguing, but the most amazing thing was the comfort. Realizing that here was a yarn that made a sock of great comfort, plus hundreds of potential uses in other products, a licensing arrangement was worked out with Heberlein. At the same time the Corporation took samples to knitters of men's hosiery. In some cases they could not persuade knitters to make and test a few dozens.

Last summer the first socks arrived at a small number of retailers. One New York store chain had salesmen wear the socks as sales training, then put the socks on display. They sold at $1.50. Attracted by the stretch novelty, a few adventuresome men bought one pair. A few days later they came back, talked about the comfort, and bought more. A large midwestern store saw them and placed the largest order a major knitter had ever had from a retail store. It was evident there was a large market if people wore the socks. At present, hosiery knitters are knitting as many pair as the current supply of nylon will allow.



Helanca yarn relaxed and under tension.



Maslands Nubiné carpet is a new example of Saran's versatility.

Saran Staple Fiber

SARAN

The Saran Yarns Company is now in commercial production of Saran staple fiber which lends itself to spinning on the worsted and woolen systems, and is compatible with both natural and man-made fibers.

The first development of Saran leading into the textile field was the discovery, in the early days of World War II, of its possibilities for use as insect screening where, woven in mesh from extruded monofilament, it proved easy to handle, elastic and, under normal conditions of wear, almost indestructible. It was rust-proof, stain-proof, resilient and not liable to be attacked even in tropical conditions by moisture, insects, moths or molds.

Saran, in the post war phase, was channeled to meet the needs of the automobile industry, where seat covers were required to be resistant to oil, stains, moths and other hazards, and extremely long wearing as well. Because it was flexible, it could be satisfactorily woven from heavy denier extruded monofilament yarn. In the requirements of this vast industry, about 85% of the total of all Saran produced was absorbed, Saran holding approximately one-half of the entire auto seat cover market.

Today monofilaments of 0.005 to 0.070 diameter are produced and they are widely used. They are employed in making outdoor furniture, commercial seating, handbags and luggage coverings, in addition to auto seat covers. Finer sizes of filaments — from 70 to 100 denier — multifilament yarns and tow are available. Possibly the most important development to date is staple fiber — straight, crimped and curled. Curled staple is claimed to be unique in the field of man-made fibers in that it simulates closely the curl and resilience of natural wool, and is suitable for processing on both woolen and worsted systems. The fabrics derived by spinning and weaving it have bulk, coverage and hand.

Inspecting Saran staple before shipment.

The factors which Saran, in monofilament, multifilament, or staple fiber forms, contribute to fabrics are toughness, flexibility, and abrasion-resistance, which give long life and hard wearing qualities, even under adverse conditions. Because the fiber is perfectly round and smooth, it collects no particles of dust or dirt, and is free from resulting abrasive and shearing action. Because the color in Saran is built in, it does not easily fade or bleach but is virtually permanent and retains its fresh looking quality, even when the fabric is treated with strong chemicals for cleaning. Saran staple is flame-proof. It will soften, char and melt, but will not support a flame. It is also moth-proof. Because it absorbs no moisture it is, whether wet or dry, practically wrinkle-proof when woven into fabrics. Finally, it is highly compatible with other man-made and natural fibers. For these reasons Saran is important, not only for industrial fabrics, but is especially suited to the needs of carpet manufacture, a field in which it is becoming outstanding. While Saran's present applications are in the fields of carpeting, drapery and upholstery fabrics, it is being used — still experimentally — in conjunction with traditional fibers for the manufacture of suitings and overcoats. *(please turn)*

NEW FIBERS . . .

ELASTIC YARNS

In the search for a non-discoloring elastic fabric, Lastex has reached a successful outcome, thus contributing an important advance in the technique of manufacturing elastic yarns for all types of consumer goods.

Ever since the return of natural rubber following the war, the field of elastic yarns, fabrics and garments has been plagued with a mysterious and fugitive discoloration (or *pinking*) of white elastic fabrics. Sometimes this discoloration became evident in the cone, but most of the trouble developed after expensive fabrics and garments had been made. The discoloration was irregularly present in the white textile fibers that were used with Lastex and complaints backed up from consumers, retailers, garment manufacturers and fabric mills. The problem, therefore, was to find what causes, if any, lay in the rubber thread itself and, if so, how to eliminate the source of trouble.

For fashion reasons, the popularity of white elastic fabrics in the postwar period has risen to almost 90% of the colors used in corsetry as compared to 10% before the war. In addition, there was a rise in the use of man-made fibers which, in themselves, made elastic fabrics more translucent under laundering conditions. Another pronounced postwar trend was toward lighter fabrics. In addition, more mesh or open constructions were desired and developed to meet the comfort requirements of the foundation industry. Concurrently, laundering shifted to much greater use of detergents of many brands and varied chemical structure. All these added up to great pressure for white fabrics that would stay white and which still would have all the necessary qualities of stretch, tension, appearance and hand.

Intensive laboratory work on chemicals and compounding of latex for rubber thread led to the perfection of a new compound which showed high promise in initial laboratory tests. Physical characteristics as to elongation, modulus, chafe-resistance, strength, aging launderability and uniformity were retained, and a white extruded rubber strand was obtained with remarkable color stability.

Since Lastex yarn flows through garment and fabric manufacturing stages and then through retail stocks on the way to the consumer, a long time lag was involved before solid consumer confirmation could be obtained. For the same reasons, there was a large amount of merchandise already present on all of these levels which necessitated great caution in any large scale industry trial.

The first Lastex yarns with this new non-discoloring core were therefore quietly fed into surgical hose and knitted girdles in order to get rapid and critical evaluation in two end-products. Selected manufacturers in these fields cooperated closely in evaluating this new yarn in white fabrics and supplemented laboratory tests with manufacturing, laundering and wear tests.

The next large scale production runs of these new threads were supplied to select accounts who made so-called *power net* fabrics. These critical bobbinet constructions were distributed to leading corset firms so that both fabric and garment trials proceeded on a much wider basis and in a highly popular fabric. As production rose, this superior white elastic yarn was supplied to broadloom weavers for use in white elastic satin and similar corset materials.

For months these ever-widening market trials proceeded with steady success, with the result that laboratory development was confirmed on an exceedingly large scale. In addition, the time lag enabled the industry gradually and quietly to move stocks into the new superior white fabric. Complaints diminished progressively as the change-over took place. This development is now being widely publicized to both the trade and consumers. In addition, the new non-discoloring core is being made available currently to the swimsuit, lingerie and underwear trades where white elastic fabrics also have high fashion importance.

For an outstanding example of new development in nondiscoloring Lastex, see page 57.

E N D

Photo from CLAMOUR

Five Leading Designers answer questions on the Lure of Lace in Lingerie

We asked five designers a number of questions on the subject of lace in the lingerie fashion picture today. They were as follows:

1. *The change in the fashion silhouette . . . how does this affect the use of lace textiles in slips?*
2. *What type of lace is most desirable for lingerie?*
3. *What is your preference in the use of new fibers in lace as opposed to cotton and silk?*
4. *Are there any limitations in the use of lace? If so, is it an economic or a fashion question?*
5. *What are the popular colors in underwear?*
6. *Does the increased use of lace contribute to the comfort as well as the glamour of a garment?*
7. *What are the new fashions in nightgowns?*

Now Here Are the Answers . . .

HELEN HUNT BENCKER OF LAROS TEXTILE CO.

IN SLIM SLIPS, the decorative value of lace becomes more important than ever, and it should not be used with the unimaginative or conventional look of the past. When lace can be used to accentuate a functional feature, it becomes doubly significant. For example, in a very slim petticoat, recently designed to be worn with slit skirts, a V shape cut-out was bordered by a wide band of nylon Alençon lace, thus focussing attention both attractively and

(please turn)

Helen's little Bikini aglow with lace

LAROS

effectively on this important new silhouette feature. The petticoat was so designed that a woman wearing a slim skirt with a slit could always be certain that her slip was not showing through the slit. Also the petticoat could be shifted so that the V cut-out would fall to coincide with the skirt slit, whether at front, side or back.

Valencienne and Alençon laces in their various forms are most desirable for lingerie. I prefer nylon versions of both of these types because infinite delicacy of design can be achieved without any sacrifice of durability. Shrinkage is also thereby eliminated.

I prefer nylon laces generally to those made of cotton or silk. There is an exception and that is in the Venises where cotton yarns produce an effect infinitely richer and more decorative than nylon or other fibers.

* * *

There are very few limitations to the use of lace in lingerie. Recently we made a whole slip of lace which was very popular for wearing under cocktail dresses. This usage expressed the ultimate in luxury. Imagination in the application of lace is the most important factor in using lace without limitation. Price is not a factor generally, because versatility in application can produce lingerie at many price levels.

Women are becoming increasingly conscious of color in lingerie and of the chic of creating color harmony between their under and outer wear. For example, the current overwhelming trend to beige finds buyers searching for beige lingerie, while navy has become as classic in slips and petticoats as black and white.

* * *

Lace can be counted upon to contribute comfort as well as glamour to a garment. Lace has a cool airy quality which adds to the joy of wearing lingerie.

There is a growing importance to the below-the-knee length nightgown. It is most popular with a full skirt. Full skirts lend themselves beautifully to a great variety of lace treatments. There can be swirls, circles, plaids, loops and rows of laces. To me, the most important part is the placement of the lace with a sense of rhythm. There must be unity and a maximum of variety within the unified effect.

We also believe strongly in the cinch gown. Women have come to know what a cinch belt can do for their figure. While they do not want quite such pressure on their waistline in a nightgown, a slight molding effect is perfectly comfortable and gives an elegant line to the gown.

CARTER

COLURA

Priscilla Harding of Carter's

The new slender sheath silhouette creates an opportunity for a new technique in the use of lace textiles in slips. In place of the bouffant tiers of lace and ruffled flounces, lace may be used richly in wider bands, beautiful all-overs, and intricate appliqués. Vertical panels or insertions, perhaps underlaid with color, create richness of design and add sparkle and accent to the lace.

For lingerie, although many types of lace are suitable, most women instinctively choose the most delicate, most sheer and most fragile of laces. The Duchesse laces from France are one of my especial favorites — as are also the Calais type Valencienne laces.

We use nylon laces exclusively on our nylon slips and gowns as we believe the lace should be just as durable and long wearing as the garment. I am looking forward to seeing Dacron in lace to be used on Dacron slips and gowns.

* * *

From a designer's point of view, there is just one limitation in the use of lace. The most difficult problem I have is: how do you make a slip trimmed with only a 2, 3 or 4 inch galloon look original. It can be solved by adding net, ruffling or pleating, but it would be so nice to have, apart from expensive-to-cut-and-attach appliqués, some variety of shapes or sizes. As to the economic limitations in our field, only the cost of nylon lace limits its use. The trimmed slip is winning customers day by day away from the classic basic cut. From a fashion point of view lace is clearly the favorite in every type of slip from the most popular choice to the highest fashion. This is especially interesting as it is almost a complete reversal of the trend to casual simplicity in outerwear. The feminine desire to *be* feminine is probably the real psychological reason. In other words, few economic limitations and practically no fashion limitations exist.

Colors in lingerie are divided into two basic groups. In slips, white, white, white and a small smattering of fashionable outerwear colors such as platinum, beige or gold. Navy, black and pink are important basic slip colors. In nightgowns and robes, the color trend is away from the very brilliant and deep colors to the high-keyed bright pastels, always clear and fresh, seldom muted and, most important, becoming to the average complexion without make-up.

Lace in large areas could contribute comfort-in-coolness. And from the viewpoint of 'mental comfort' there is nothing that makes a woman feel more 'comfortable' than the knowledge that she looks lovely and feminine in lace!

In nightgowns, one of the really new trends is that a designer is free to make the most feminine, the most dramatic or the most colorful lingerie she can imagine.

Georgette Soper of Seamprufe

Any change of silhouette could only increase the use of lace. For slim line skirts, slips will be made of all-over lace. I believe that the bouffant effect will remain for some time because bouffant skirts hide a multitude of sins (large hips, legs, etc.) and make the waist seem smaller. Slips with the entire yoke of lace will continue to be popular as long as sheer blouses are.

I like to work with 100% nylon lace of the soft Alençon, Chantilly and Val types because they lend themselves so beautifully to high fashions of today.

* * *

To a good designer there is no limitation in the use of lace because she knows how to apply it. Any limitation has to be an economic one which is imposed on her. Further use

SEAMPRUFE

of lace is a challenge to creativity.

The increased use of lace does not contribute to the comfort but to the glamour of the garment. Women feel very glamourous and excitingly chic in a lacy garment. For a small price she can feel naughty and nice. Gowns should be of high fashion, festive looking . . . just like an evening dress.

Noriene R. Barrett
of
Colura

Lace is an age-old, yet ever-new expression of woman's femininity. Ingeniously used in the design of lingerie, it can epitomize the highest in fashion, the ultimate in appeal to today's consumer. It symbolizes the new era of elegance, taste and fashion-consciousness which is taking hold in intimate wear — an era made possible by the advent of nylon and other long wearing fabrics. Women no longer have to think first in terms of practicality in their intimate wardrobes. Bolstered by the inherent strength of nylon yarns, they can now indulge their love of delicate laces, gossamer effects, luxury underneath.

The flowing, slimmer lines, the accent on femininity that characterize the new season are perfect foils for lace. Wide lace is a trim which can be used as effectively in straight sewing as in ruffled treatment. Narrower designs such as Val emphasize the charm in intimate styling.

* * *

All lace types from dainty Val to heavy Venise can successfully find their way into lingerie designs. The primary rule is to suit the mood and motif of the lace of the garment:

Chantilly gives an old-world elegance and can be successfully teamed with fabrics of light texture.

Venise is a natural for such inner-outer designs as vestee and blouse-top slips.

There is an acceptance of the evening-gown trend in nightgowns. Bodices are masterpieces of fit as well as glamour. Lace fits into this category perfectly, permitting the kind of moulding necessary to this new design technique.

Rose
Manson

Today, we see a true acceptance of the trend toward femininity in lingerie. Women have become so particular about the fit of slip and nightgown that they are showing a reluctance toward moving the waistline lower and making skirts less graceful with pencil-slim lines. Femininity in lingerie means, today, flowing skirts, fitted bodices and, especially, an abundance of *LACE*.

Lace, I have found, can be made to fit the bustline as well as fabric and, since nylon lace is now available for practically all price merchandise, women are buying lace-trimmed garments as never before.

* * *

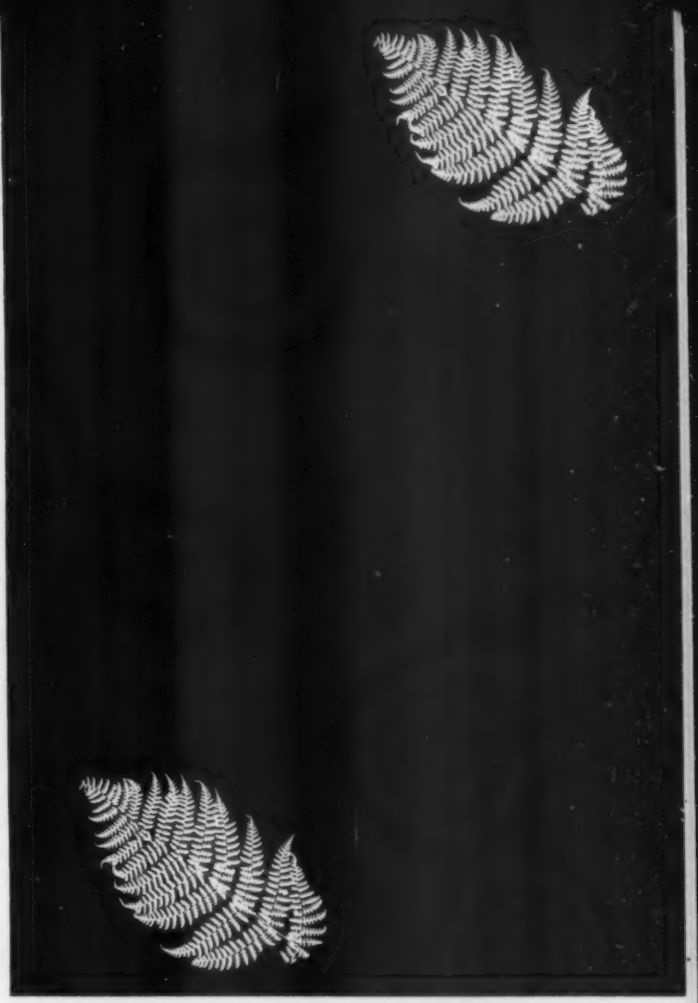
Nylon lace bodices not only have better fit than those of cotton lace but they give a woman better support because of the nylon's firmness; and the fact that no ironing is necessary helps the lace conform to the figure rather than distort it as ironed cotton lace tended to do.

There are no economic limitations to using lace. It is true that nylon lace is somewhat more expensive than cotton lace, but the difference in price is not enough to hinder its being used even on the most inexpensive nylon garments. So far as fashion is concerned, we find no limitations again; lace is for all-year-round, all-garment designs. Fall and winter lines can show lace-trimmed merchandise as well as spring and summer lines.

* * *

In nightgowns, too, designs are higher-styled this season than ever. I am now making halter necklines, which up to now so many women liked but found cutting at the neckline, comfortable as well as flattering. My new gowns have fitted lace bustlines with contrast shade linings and have combination pleating and laces and combination colors (dusty pink with red raspberry, for instance) with striking effect.

So, to sum up my new designs in lingerie I would say . . . there will be 'body contour' fit, nylon lace used lavishly on all types of garments, higher styling in suit slips, more flattering nightgowns with stress put on femininity, and greater use of higher shades in fabrics and matching laces.



Floral Pattern 100 per cent Chantilly with pleating effect by I. Zendman Inc.

TEXTILE HIGHLIGHTS OF 1952

Compiled by Textile Editor George E. Linton for readers who may be interested in reviewing significant events in the textile field during the past twelve months.

January:

According to the Rhode Island Textile Association, New England's cotton and rayon production costs were 40 cents an hour higher than those of the South, as a result of wage and work load differentials.

The National Better Business Bureau recommended that, in conformity with the Federal Trade Commission order to discontinue the use of misleading geographic terms, the word *Swiss* be applied only to goods made in Switzerland.

Charles F. Roos, president of the Econometric Institute, Inc., stated that in ten years' time the new man-made fibers will claim about 60 percent of what are considered today's wool end-uses, leaving 40 percent for wool fiber and yarn.

The Journal of Commerce reported that wool is rapidly being replaced for automobile fabrics, chiefly by nylon with its lower cost, ease of cleaning, and its *slidability*.

Worth Street, Inc., Textile Center of the World, was the name chosen recently by the newly-formed Worth Street textile organization. President of the organization is Saul F. Dribben, Cone Mills, Inc.

The sale of Perlon in this country was licensed by E. I. du Pont de Nemours & Co., Inc., in an agreement with seven producers of the fiber in West Germany.

The new name of the Rayon Yarn Producers Group was announced as Rayon and Acetate Fiber Producers Group, designated in accordance with the recently revised FTC rules.

It was estimated that about 70 percent of present rayon production capacity is in the South, chiefly in the Carolinas, Georgia, Tennessee and Virginia.

February:

Japanese silk production the year ending May 31, 1952 was estimated at about 185,000 bales, each bale 133⅓ pounds.

A U.S. Department of Agriculture report showed that the per capita use of all textile fibers dropped three-quarters of a pound, but that the consumption of cotton and man-made or synthetic fibers, other than rayon, continued to rise. Wool per capita consumption showed a loss from 4.16 pounds in 1950 to 3.09 pounds in 1951.

The trade practice rules concerning identification and use of acetate and rayon became effective on February 11th.

The Japanese raw silk price stabilization council set a minimum price of 180,000 yen per bale ($3.78 per pound) and a maximum of 230,000 yen ($4.83 per pound) for A Grade 20/22 denier, f.o.b. Japan.

Despite the prevailing textile depression there was a record mill expansion in the Southeast. To take care of consumer needs for the next ten years, and taking into account the increase in population, planning committees announced that the emphasis will be on better merchandising and advertising.

March:

Total fiber consumption in the country in 1951 was almost 6.9 billion pounds, about one percent less than in 1950. Cotton, as usual, led with 71.2 percent; wool showed a consumption of 7.1 percent, with acetate and rayon accounting for 18.5 percent. All other man-made or synthetic fibers totaled 3.1 percent. On a utility basis (allowance for waste in manufacture) cotton consumption would amount to 59 percent.

An order prohibiting Fisher & Deritis, a Philadelphia firm, from selling their rayon sweaters without disclosing the inflammable nature of the product, was handed down by the examiner for the Federal Trade Commission. This was the first decision resulting from the *torch sweater case* of January 21, the date that the FTC charged the company with failure to disclose the flammability of their sweaters.

April:

American Cyanamid Co. announced its new acrylic fiber X-51, whose properties, processing and dyeing abilities are claimed to be of high caliber.

Cuprammonium staple was being produced at the rate of about 9 million pounds on an annual basis; considered ideal for linen-type fabrics and blending with acetate for flannels.

Perma-Sized process for shrinkage control of knit goods, said to eliminate the need for ironing, was announced by Robert Reis Co.

Fabrics exported in 1951 exceeded the 1950 figures by 45 percent. Of the total exports, Canada took about 20 percent while the Philippines took 15 percent.

The production of viscose in this country amounted at this period to about one billion pounds annually; acetate was about 550 million pounds; all the other man-made and synthetic fibers totaled 400 million pounds.

Textilmachinenbau of Germany has developed a new spinning frame for woolen-type yarns in which the front rolls of the frame revolve as they draft. The claim was made that this ring spinning frame has the advantages of mule spinning and, combined with the higher production on the frame, can be a revolutionary item in yarn manufacture.

May:

Japan was estimated to be the largest exporter of fabrics with more than one billion square yards exported last year.

The American Institute of Laundering reported that faults in dyes and dyeing accounted for over five percent of all damages and blemishes in over 5,000 articles examined in their laboratory. Broken down, the figures revealed that men's shirts made up 30 percent of all items, sheets about 12 percent, tablecloths 9 percent and women's uniforms 7 percent.

A subsidiary of Courtauld's Ltd., Luvisca, introduced shirting fabric made of Egyptian cotton warp and high tenacity rayon filling. Semi-stiff collars of this shirting fabric were made with an interliner which contains polyethylene yarn fused to the dry state.

June:

Home sewing and dressmaking, according to the National Cotton Council, consumed 386 million yards of piece goods in 1951. 60 percent of the material was cotton. The number of home sewers had risen from five million in 1948 to not quite 22 million in 1951.

The production of wool throughout the world, since its low in 1947 of 3,710 million pounds, will be increased to about 4,070 million pounds of grease basis wool for 1952. This figure exceeds the wartime average, but this is below the peak production of 4,200 million pounds in 1941.

The FAO of the United Nations reported that ten percent of the world's population uses forty percent of the world's textiles. Seven percent of the world population uses 30 percent.

The new J. P. Stevens building was opened at 41st Street and Broadway, New York City. Robert T. Stevens stated that "the consolidation of the various fabric divisions of a firm under one roof is now possible with the boundaries among the different textile fibers disappearing."

The world production of man-made and synthetic fibers and filaments for 1951 reached almost 4¼ billion pounds, an increase of 15 percent over 1950. Viscose and cuprammonium rayons totaled over 3⅓ billion pounds; acetate, 600 million pounds; the non-cellulosic types, 260 million pounds.

July:

Automobiles, sheets, shirts, trousers, bags were the five largest consumers of cotton in 1950 and 1951. In the latter year, automobiles consumed 892,000 bales of cotton.

Approval was granted by the National Production Authority to the Union Carbide and Carbon Corporation to build a $30-million Dynel staple fiber plant in Spray, N.C.

The New York Section of the AATCC announced that it would undertake a broad program to combat static electricity in textiles, chiefly among the synthetic and man-made fibers.

Out of a total of 96,000 textile workers, 53,000, or 55 percent, were employed in the Southeast; 25,000 in the Middle Atlantic states; 18,000 in New England. This is the number of production workers in the man-made and synthetic fields.

The Bureau of Labor Statistics reported that production workers in the apparel and other finished textile products industries number 966,000.

August:

Two well-known firms — Hego Fabrics, Inc. and Robbins Mills, Inc. merged this month. Herman E. Goodman became executive vice-president of the new mill organization.

X-2 was announced by Dan River Mills. It is a new chemical for the modification of cellulose.

The completed survey on nylon-armored vests worn by our troops in Korean combat showed a decrease of 60 percent in chest and abdominal wounds.

F. Eugene Ackerman, Director of the Wool Bureau, Inc., informed the Illinois Men's Apparel Club, Chicago, Ill., that the Bureau is not engaged in any so-called "battle of the fibers." Mr. Ackerman stated that "there is room in this great and constantly expanding market for all fibers and all blends to meet the needs of our rapidly growing population."

The Worth Street Historical Society was formed to collect items for museum display and to further the cause of the Worth Street textile market.

September:

Du Pont introduced *Barotor* for pressure-dyeing of Dacron and Orlon and for blends of these fibers with other textile fibers. The machine covers all the factors necessary for the ideal dyeing machine.

The British Cotton and Wool Dyers' Association produced a *Lanfix* process which can be used on wool in any form. The method claims to be superior to wet chlorination treatments which, very often, effect the serrations in the wool fibers.

Japan in 1951 produced 10.7 thousand metric tons of raw silk. About 22 percent of this total was consumed in the United States with Japanese mills using about 60 percent.

Acrilan, product of the Chemstrand Corporation, appeared in consumer merchandise in leading stores.

October:

Government removed its final emergency control in the textile production field. The NPA removed a regulation made in December, 1950 to spread defense orders for high tenacity rayon yarn, used for automobile tires, among the several rayon manufacturers.

Douppioni silk, which had been receiving considerable attention, should hereafter be graded as heavy, medium or light according to the wishes of the International Silk Association. The United States silk manufacturers have shown a keen desire to manipulate douppioni because of its qualities of strength and its ability to be used with other fibers.

The United States Testing Company established a division to observe the evalution of consumer appeal of fabrics with respect to design or motif, color, textures, and the reasons for consumer acceptance or rejection.

November:

Max Paabo, Estonian-born Swedish textile man, invented a loom capable of beating-in 350 picks of filling yarn through the shed of a loom, per minute. A blast of air instead of the conventional shuttle makes this high pickage possible, the air actually blowing the picks through the loom shed. Known as the Maxbo Loom, it will have a world market.

Burlington Mills acquired the Peerless Mills of Rossville, Ga., one of the leading woolen and worsted plants in the nation. This is a new field for Burlington and completes their production of fabrics from all important textile fibers.

Rhode Island School of Design was the first textile school in the country to announce a full course in blended yarn engineering.

Announcement was made by Philip Vogelman, vice-president of the International Silk Association, that the 1953 Silk Congress will be held in Milan, Italy.

The National Cotton Council reported that three full sets of sheets and pillow cases for every family in this country could have been produced from the cotton that was destroyed by the boll weevil and other pests in 1951.

The gentleman who coined the term *virgin wool* retired as sales director of Botany Mills. He is Mr. Alex Walker who directed the production and merchandising program which developed the well-known Botany 500 line of clothing made by H. Daroff & Sons, Inc., of Philadelphia. Mr. Walker originated *virgin wool* while he was president of Strong Hewat Co.

Cotton plants will have spent about $200 million dollars for processing machinery this year; man-made and synthetic mills are almost at the same figure while woolens and worsteds mills, knitting mills, and dyeing and finishing plants follow in order.

A. D. Juilliard & Co. closed its rayon operations at the Standard Silk Division, Chadwick, N. Y. The company will concentrate on woolens, worsteds, corduroys, velveteens, blends and cotton grey goods.

Schwarzenbach Huber Co. was concentrating about three-fourths of its output on Chromspun fabrics in an attempt to reverse the trend of declining filament fabric production.

Tennessee Eastman announced that colorfast Chromspun acetate fiber is now available in staple form in a range of popular colors.

December:

North Carolina was leading the country in the number of persons employed in the textile industry. Better than one-third of all employed are in the production of textiles.

Cotton spinning was at a level of about 135 per cent of capacity on a two-shift, 80-hour-a-week basis.

World wool production for 1952 will be around 4.17 billion pounds on a grease basis — an increase of about 140 million pounds over 1951.

The first suitings of wool and Vicara were made available at some stores. Exclusive use of the fabric is held by Oakloom Clothes. Six stores were selling the garments which are made in a 50-50 blend of the two fibers.

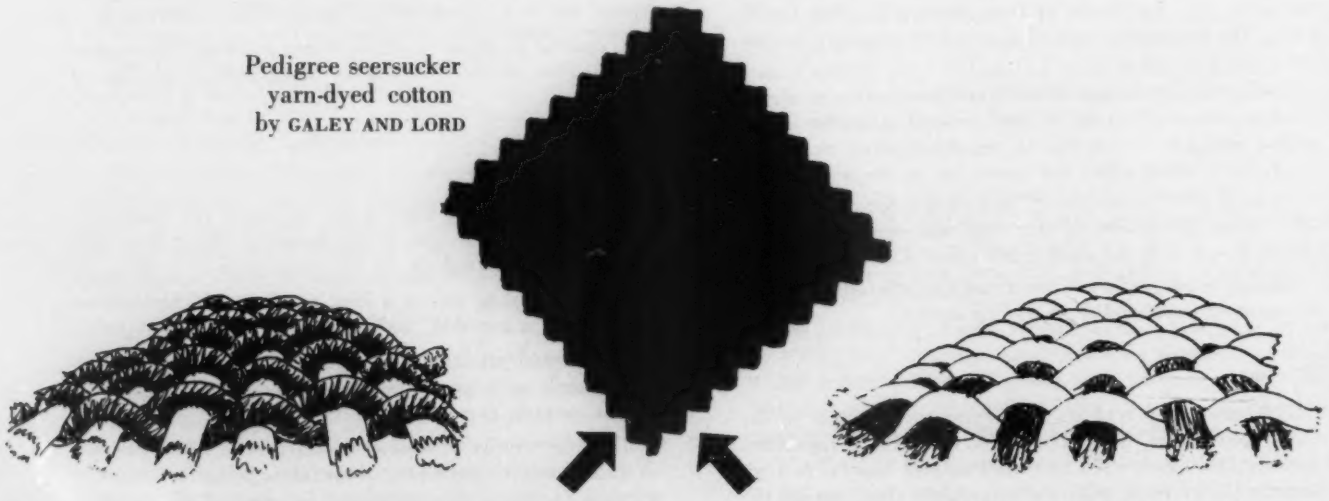
COLOR SECRETS OF YARN-DYED COTTONS

How brilliant combinations are obtained from a few colors.

Yarn-dyed gingham plaid by GALEY AND LORD, a fabric in which four basic colors give eight harmonious combinations.

How iridescence is woven into yarn-dyed fabrics.

Pedigree seersucker yarn-dyed cotton by GALEY AND LORD



Seen from one direction the dark threads show . . .

seen from another angle the light threads show.

THE STATUS OF YARN-DYED COTTONS

It would appear that a considerable segment of the fashion-conscious public is currently engaged in rediscovering cotton. Wallach Brothers of New York has taken official cognizance of this trend in an advertisement that hails the miracle fiber N-O-T-T-O-C. The writer of the ad claims that N-O-T-T-O-C is light and cool and can be made into any imaginable fabric. It tailors well, launders perfectly, is moth-proof . . . yet costs less than any other fashion fiber in the world. When you come to the end of the recital of the virtues of N-O-T-T-O-C, it turns out to be cotton spelled backwards.

THE TIME HAS indeed come for a general re-evaluation of cotton. Any lover of fine fabrics will find it a particularly rewarding experience to go back to the original cotton classics — the great yarn-dyed group. These are the fabrics that are made by dyeing the yarns *before* weaving, so that the pattern runs through and through the cloth.

Here you have the oldest cottons in the world, and at the same time the newest. They are the most primitive, and yet the most modern. Yarn-dyed cottons 2,000 years old have turned up in Peruvian excavations, yet their lineal descendants are making fashion history today in the form of the new *transitional* cottons, the new winter cottons, the black *undertone* cottons. The yarn-dyed group is the most basic, but the least understood . . . the most restricted and confined in one way, but the most challenging and inspirational in another.

Although it is not generally realized, it is an indisputable fact that yarn-dyed cottons were largely responsible for the so-called Cotton Revolution. It was this group that was used exclusively by Mary Lewis in her initial presentation late in the roaring Twenties; and it is this same fabric group today that is continuing to revolutionize the textile world all along the fashion front.

The Nature of Yarn-dyed Cottons

When your grandmother bought those dear old pink and white striped shirts for the head of the house, she had a good old-fashioned way of telling the difference between yarn-dyed cottons and prints. If the pattern showed through on the reverse side, she knew the color was dyed in the yarn; if not, she knew it was put on by printing. Today, her primitive detective methods would not necessarily work, thanks to the modern trick of printing identical patterns on the front and back of the cloth. Still, grandmother could generally pick out the yarn-dyed cottons made by the *colored goods* mills if she just let her eye follow the colored threads through-and-through the pattern of the fabric.

Maybe a somewhat more searching inquiry is in order, to help in the appreciation of "those endearing young charms" of yarn-dyed cottons. It might be well to start by asking a fundamental question: How do fabrics acquire their colors and patterns? In other words, what are the methods by which textile designers *decorate* cottons? There are several. Each has its peculiar advantages and its particular adaptability for specific end uses.

You can take any cotton grey cloth and dye it any color you wish in the piece. This kind of piece-dyeing is the common method for solid color broadcloths, poplins, twills, gabardines, and many other cotton fabrics.

You can weave practically anything that the designer's fancy dictates on a jacquard loom, with some limitations in color but virtually none in weave. It is even possible to reproduce elaborate oil paintings; but the jacquard construction* is more properly used for brocaded effects in draperies and dress goods, sculptured towels and carpets, and fabrics with damask-like patterns. Other striking effects can be obtained by embroidery and by the amazing new variations of embossed designs that are lending diversity and excitement to current textile presentations.

When it comes to printing, you can reproduce on cotton cloth literally anything and everything that an artist's brush can put down on paper. There is no limit to the profusion of styles and effects you can get by textile printing, and hardly any deviation in the fidelity of the reproductions.

In the case of yarn-dyed cottons, the story is entirely different. The weaver is restricted to effects that are obtainable by interweaving colored threads lengthwise, with another set of colored threads crosswise. To be sure, the threads may be arranged in any order you choose; but their direction cannot

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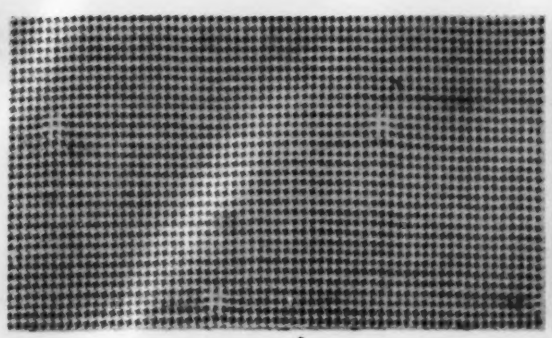
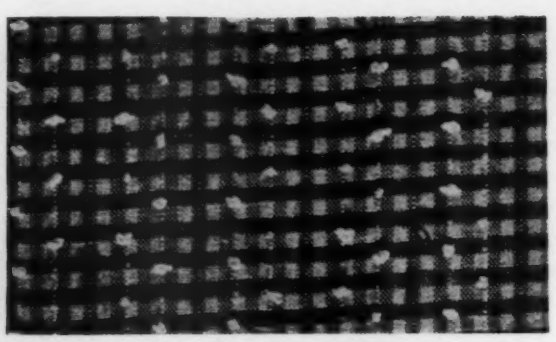
*Though dyed yarns are extensively used on jacquard looms, the non-technical reader should note that the fabrics are always called Jacquards, never yarn-dyed cottons.

BONNIE CASHIN





Yarn-dyed Cottons . . . continued

be changed. Though it is possible to develop all kinds of diagonal patterns and even the illusion of fancy shapes, the threads themselves are always woven at right angles: one set up and down, the other left and right. The design inescapably follows the dyed threads.

Yarn-dyed cottons possess one very important and highly prized quality which differentiates them from printed cottons: their design is intrinsic, not applied; or, one might say, they are designed in depth, rather than on a plane. Because they are woven through-and-through, yarn-dyed patterns are dimensional instead of on a level . . . organic and structural instead of on the surface. All you have to do to see for yourself is to pull out a few of the colored threads of a swatch and unlace them. You will instantly appreciate what intrinsic design means and just what yarn-dyed cottons are.

The Design of Yarn-dyed Cottons

For some reason or other, writers about textiles have shied away from yarn-dyed cottons. Articles on this subject are either non-existent or gathering dust in forgotten issues of old publications. There have been plenty of discussions in print on ginghams and denims and other individual cotton fabrics woven with dyed yarns, but no previous attempt to analyze and rationalize the group in its entirety.

Here is another little oddity. Our textile schools, too, shy away from yarn-dyed cottons. You can get all kinds of instruction in the styling and designing of prints, but you will look in vain in the catalogue of contemporary textile courses for systematic instruction in the design of yarn-dyes. There is only one way to learn, and that is on the job.

Little does the neophyte reckon what he is letting himself in for when he is called into the front office and asked if he would like to get into the designing end of the business. There is no literature on the subject, and only a handful of acknowledged experts in this entire branch of the industry. Above all, you have the terrific restrictions imposed by a weaving system that works only up and down and left and right, never in a curve or fancy shape.

Yet it is unquestionably the severity and rigidity of these very limitations that furnish the challenge and inspiration which have brought forth one new style after another with an always amazing prodigality. It is indeed a new textile world in which we live. If you would like a special demonstration of the new wonders that the colored goods mills have prepared for you, just take a trip through your favorite store. You will see *never-before* cottons in winter suits and in fall dresses, but you will not necessarily recognize them as cottons, either by sight or touch. You will also encounter new coatings with new textures that turn out to be cotton.

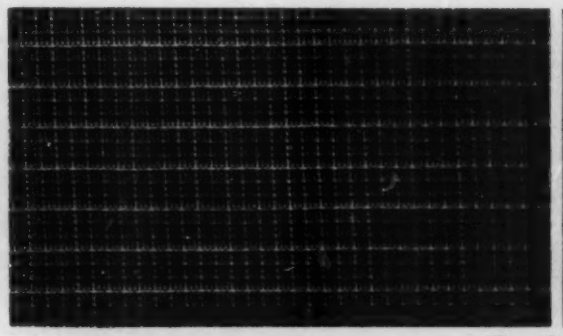
Yet it is not a case of masquerading at all. The designers of yarn-dyed fabrics who have developed the new *transitionals* and the year-round cottons have not aped the woolen mills in any way. Utilizing the new crease-resistant finishes which for the first time have made suitings of cotton feasible, they have come up with an entirely new school of fabrics, made to order for wear under the ample warmth of fur coats and in the typical over-heated American home or office. You can definitely call this a classic case of the way textile design starts with the recognition of a contemporary need. It is the thread of economics which runs through every fashion development.

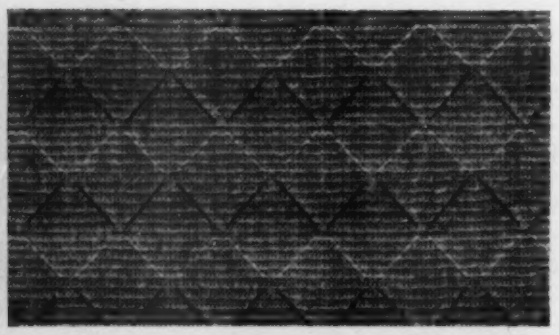
A Comparison

At the same time, you cannot look at the new cotton suitings without arriving at the inevitable comparison with worsteds. Again it must be emphasized that this is not a case of imitation but of similarity in design. Both worsted and cotton suitings are dyed in the yarn and styled in the weave. It is not conceivable that prints could ever be extensively styled as year-round suitings, for they lack the textured colors and through-and-through patterns which are the result of design in depth, whether in wool or in cotton. There is no other way in which the necessary *suiting character* can be obtained; and without this you cannot achieve the kind of fabrics that people will accept for suits and dresses made of suitings.

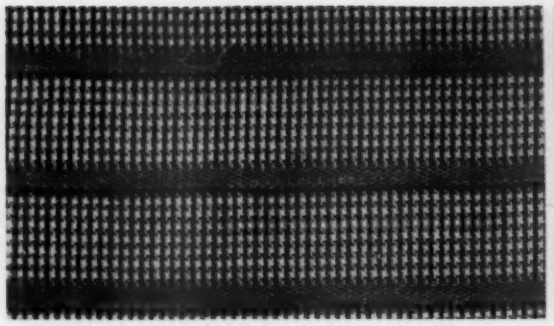
If your study of the new cotton suitings penetrates to the fundamentals, you will be led to certain basic conclusions.

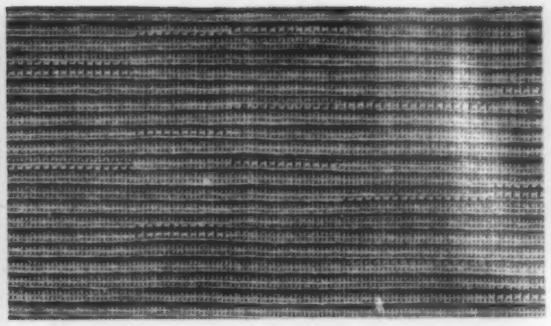
CLAIRE MCCARDELL





Yarn-dyed cotton designs on these pages courtesy Galey and Lord





CAROLYN SCHNURER

You will realize that for all their modernity, yarn-dyed cottons are essentially classic in character, rather than romantic. You will inevitably discover the fact that their origins are British rather than Continental. To be sure, yarn-dyeing is far from an Anglo-Saxon secret, as the recent influx of beautiful yarn-dyed silks from Italy will testify. By and large, however, the textile genius of the British and the Scots expresses itself in yarn-dyed designs. Furthermore, it tends to be masculine in character. Your jacquards, prints and embroideries, on the other hand, are primarily French in inspiration, feeling and origin. They also tend to be feminine and therefore fit into French culture just as the through-and-through virtues of yarn-dyed cottons are typically Anglo-Saxon and Caledonian. You will find it revelatory to bear these distinctions in mind.

Revolutionary Developments

Yarn-dyed cottons have touched off revolutionary developments all along the fashion front. Continuing with your demonstration trip through your favorite store, you will note all kinds of new adaptations of trends, together with old fabrics completely re-styled and re-designed so that they are virtually new. For example, take the *blacked colors* that have been winning special mention in the fashion press. What are they but fabrics which look like exceptionally rich plain shades with a strange black under-glow, but which turn out to be made up of three or four different colors dyed in the yarn, with the black strongly accented but not dominant?

Or take the new school ginghams. Compare them with the classic ginghams of ten years ago. They had their charm, but they also had their monotony. There was little variation from the set look of the patterns and the sameness of the colors, no matter how the designers tried to vary the basic plaids and checks. The result was that after relatively short cycles of fashion popularity, the demand for gingham would periodically slide below the point of profitable mill operation.

Today gingham has had a beauty treatment by the introduction of different tones of the same color, both in warp and filling, to get away from the old set look. In the new school of gingham designing everything is irregular and casual, with just enough balance so that the design will not lose its meaning and so that the patterns can be matched in cutting. Both the fashion feeling and the technical execution of these fabrics is so completely different that it is indeed a fashion-wise woman who knows her ginghams nowadays.

In department after department of your favorite store, you will see the results of the fine hand of denim designers. In fact, it is now glaringly apparent that denims had been *sleepers* for many years, until awakened by the style touch of the new colors and patterns. None of the yarn-dyed fabrics have been more frequently noted and quoted in the fashion press. Interestingly enough, modern patterned denims have been leaders in coordinate styling. A brilliant group of denim coordinates is one of the fabric features of the season. They are cleverly coordinated so that colors and patterns are styled to match in a wide and striking variety of harmonious or contrasting combinations. Today denims are in evidence everywhere — in town suits, daytime dresses, sports clothes, ski togs, even formals. You will find this robust group of yarn-dyed cottons breaking out all over in such divergent departments as drapery and upholstery fabrics, piece goods, men's and boys' wear, and women's apparel.

Textured Effects

To get the full benefit of your retail store tour, be sure to look very sharp indeed. Things are by no means what they seem. For example, the first faille dress you admire may not be faille at all but a smooth-surfaced fabric styled to create an optical illusion of pronounced ridges by the new yarn-dyed technique. In other words, this particular fabric would belong to what Michelle Murphy of the Brooklyn Museum calls the *Illusory Group.* In the same category you would have to place shantung effects made without the benefit of slub yarns but with clever color manipulations to provide the appearance of the typical irregularities in the filling. You will encounter many other adaptations and variations on famous textile themes; for example, embroidered motifs, jacquard effects, clipped figure treatments rendered with astonishing

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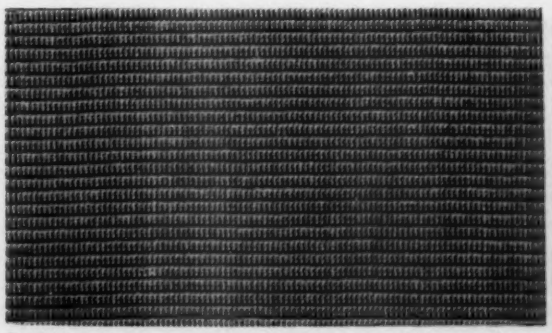
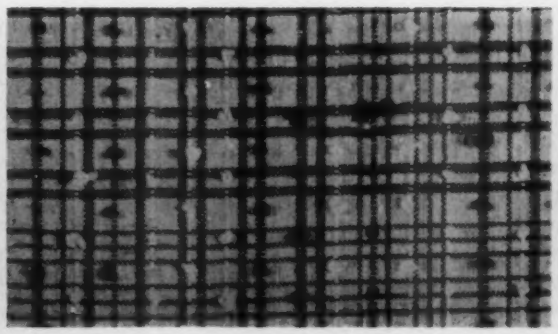
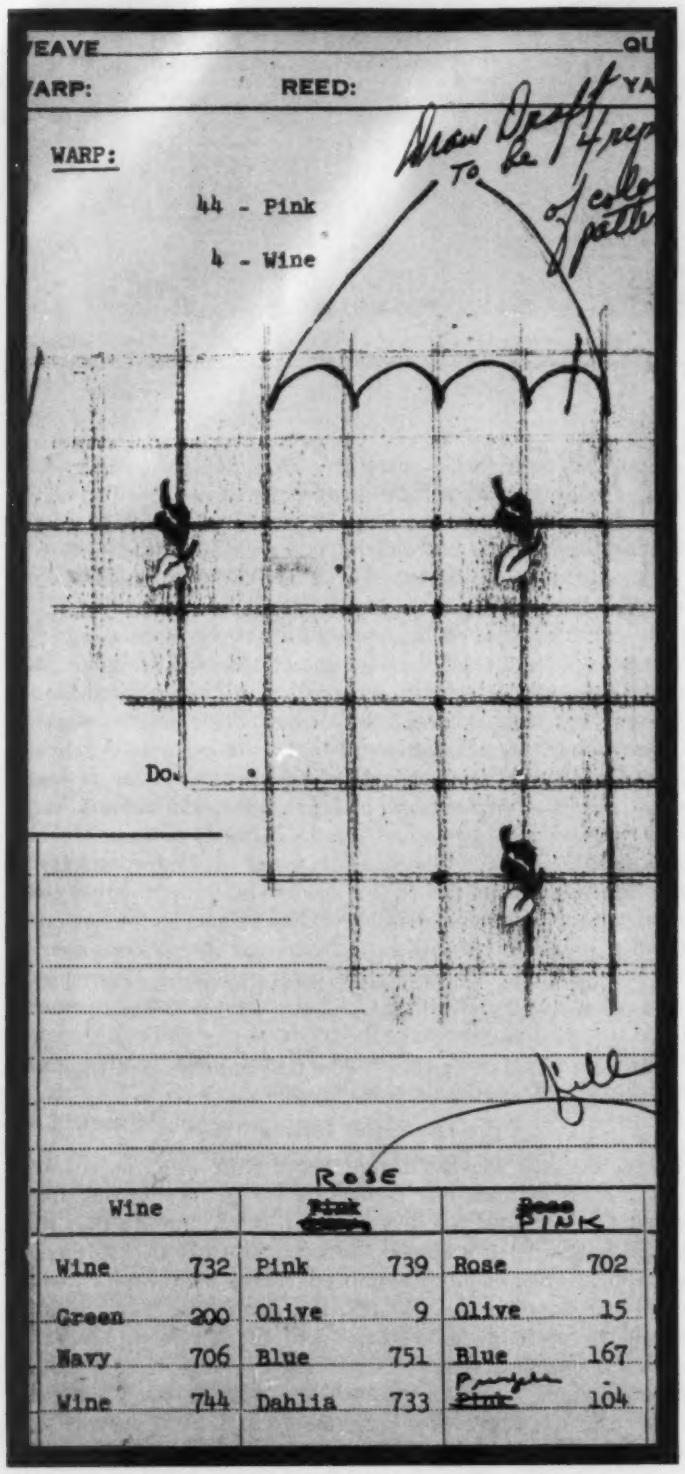


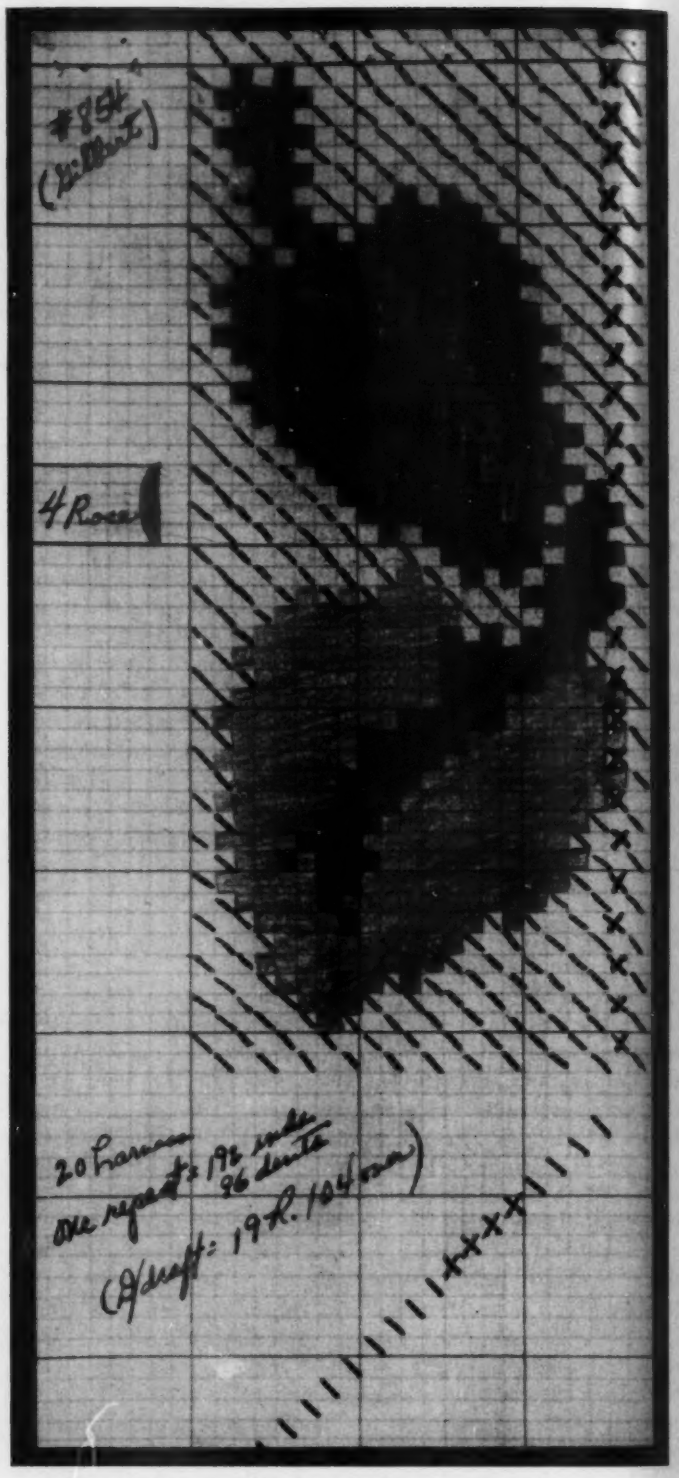


Fashions shown are designed and executed in yarn-dyed cottons

JEAN DESSÈS



First the designer makes an actual size sketch, coloring the design in crayon in the colors to be used.



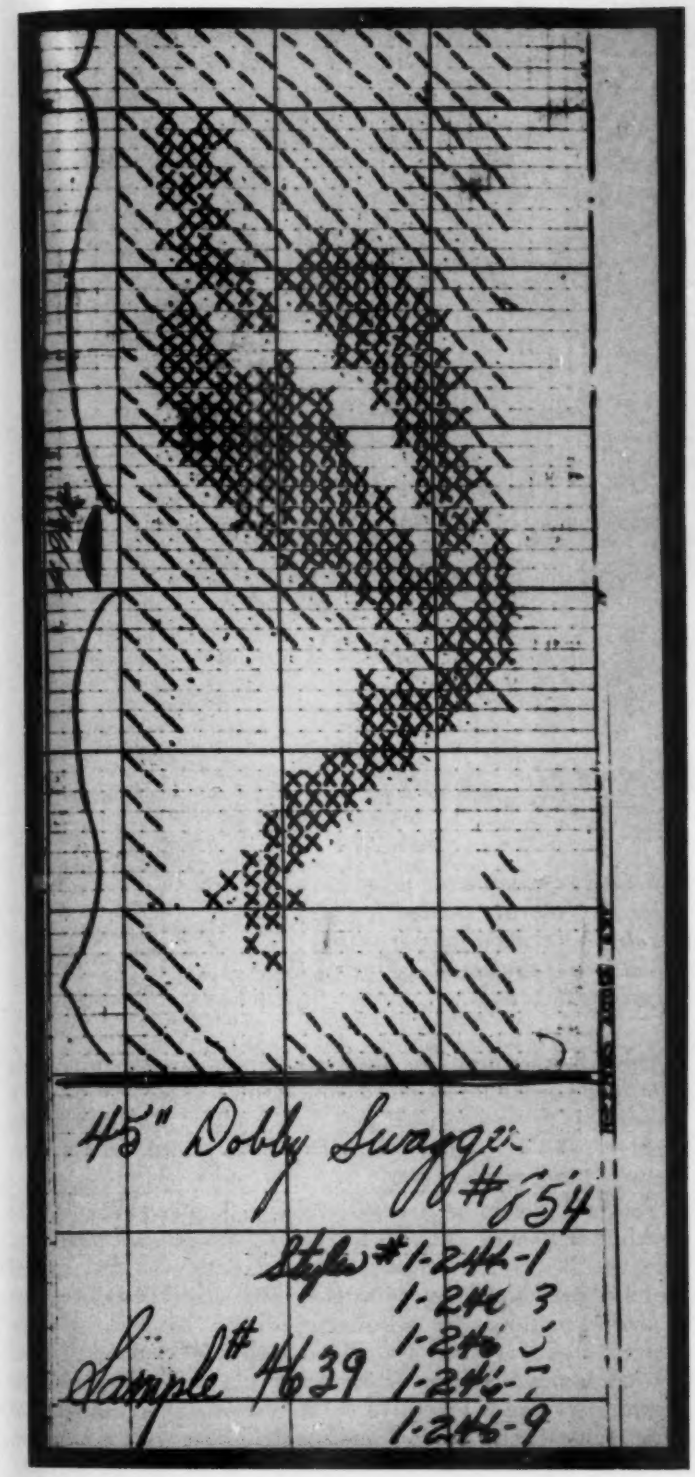
The sketch may then be enlarged on graph paper to show the actual thread-by-thread pattern in color.

Yarn-dyed Cottons . . . continued

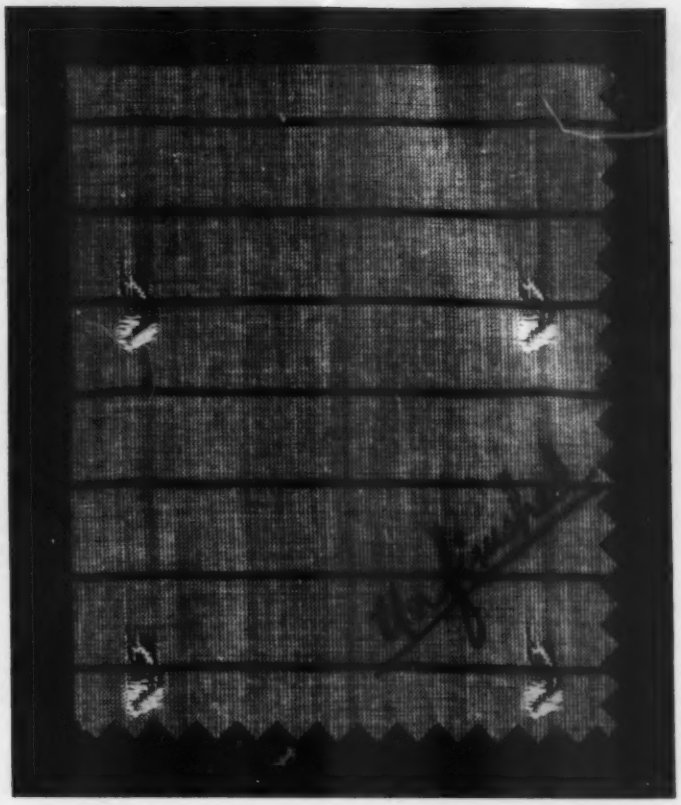
faithfulness and artistry. You are repeatedly amazed when your hand tells you that the fancy figure you admire is a subtle optical illusion created with a dobby weave and a new way of combining yarn colors so as to transcend former limitations of yarn-dyed design.

Be it noted that yarn-dyed cottons have not only overcome seasonal limitations and weaving restrictions, but also broken the barriers of accepted weight classifications. Today the fabrics in this category range from heavy-weight coatings to the sheerest tissue types, and just about everything in between. They are all part of the continuing Cotton Revolution, which appears to be one of the most pronounced characteristics of the present fabric era.

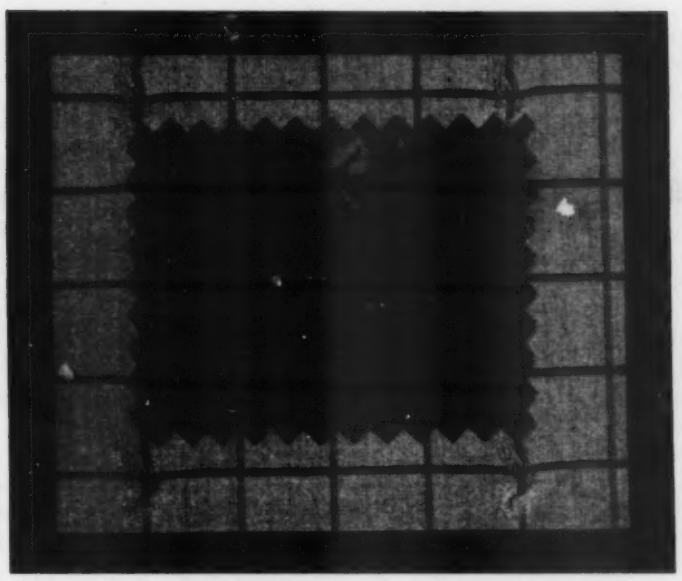
Here is another interesting observation. The new school of textile designers is not made up of wide-eyed iconoclasts. Those responsible for the current fashions all had their training in the classics. They love the classics and turn out classic designs along with their innovations. Back of the most advanced of the yarn-dyed styles in fashion cottons you have a group of designers who were brought up on shepherd checks, district checks, houndstooth checks, tartans, glen plaids, tattersalls and all the other famous traditional designs.



The dobby is worked out on graph paper, warp floats being marked with crosses, filling float squares left blank.



Next an actual loom sample is woven in order to evaluate the pattern and color

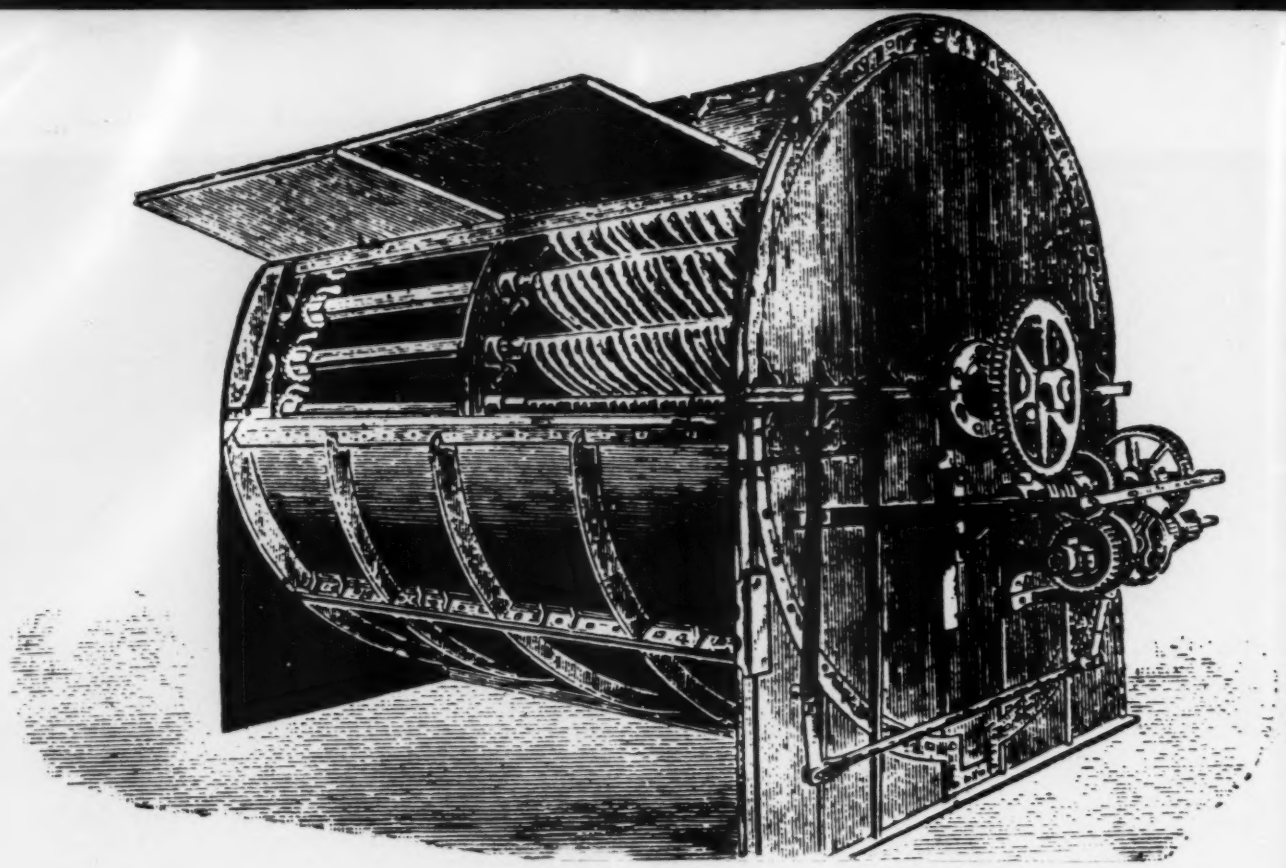


Finally the finished goods are ready for the market. Yarn-dyed dobby weave fabric by GALEY AND LORD.

This is no isolated phenomenon in the arts and crafts. The same sort of thing is going on in modern music. The most advanced modern compositions, the kind written for one key in the treble and another in the bass, lean heavily on classic training and traditions. The more revolutionary the composer, the more likely you are to unearth some one who was brought up on Bach and Beethoven.

Analogies with other arts like painting and sculpture are even more obvious. Sound classic training is an essential all along the line. The converse is true. Again and again a bad figure painting is attributable to lack of knowledge of anatomy and insufficient hours of sketching with charcoal in the life class. Your Picassos and Raoul Dufys and others who have branched out in entirely new directions can all paint in the classic manner any Thursday afternoon.

Similarly the yarn-dye designers who are making colored threads do things never done before . . . can weave them into any traditional pattern which the exigencies of the market may dictate and produce a cloth of unquestioned authenticity and style acceptability every time • *END*



COLOR COMES OF AGE

BY HOWARD KETCHAM

Until the middle of the Nineteenth Century man used what he found on the surface of the earth for the color he needed for his dyestuffs. Though outcropping minerals and crustaceans growing under the sea were used for dyes, no one had mined the bowels of the earth to release the color imprisoned in it.

AS WE NOW KNOW, treasures built up over the ages by the sun's light lie hidden in many forms beneath the surface of the earth. Coal — ordinary lumps of coal — are the transformed products of generations of colorful plant life engulfed in the course of elemental catastrophes.

At first, coal served no purpose other than to warm. Later, in the steam age, it was used to produce mechanical power. Still later, the gas coal gave off, when heated, was used to provide a source of light. But not until the middle of the Nineteenth Century was it discovered that the semi-liquid tars and residues left over in the industrial production of coal gas were usable, too. It was this discovery that gave birth to the world-wide synthetic dyestuffs industry. It was this discovery that released color from its place among the rich and privileged few to become not only the delight but the servant of the many.

In actual fact, the birth of the synthetic dyes should be called a rebirth. Just as coal gives off the sun's energy stored in plants countless aeons ago, in the form of heat and light, so coal gives up the sun's stored color to the knowing. (Alchemy? Well, it sounds like it.) All that man needed were the tools with which to liberate these colors from their dark and unlikely-looking prison. The 19th Century supplied the tools.

Discovery of Coal Tar Colors

The history of synthetic coal tar dyes started in 1856 when Perkin, the English chemist, discovered mauveine. Nothing was further from Perkin's mind than the production of a synthetic dyestuff. He was trying to synthesize quinine, which was then as now, an important drug. The brownish black, tarry substance he turned up promised little. But patiently Perkin purified the unpleasant looking sludge. Finally it yielded a powder with a pleasing color.

Did Perkin appreciate the significance of the phenomenon? Whether he recognized its implications we do not know. We do know that something impelled him to dip a piece of silk into a solution of the powder. History was made at that moment by accident; the dyer and printer had been shown the way into nature's storehouse of color.

Perkin's success set the ball rolling. Another chemist, like Perkin not a color chemist, discovered the extensive range of azo dyes. It was this brewery chemist, Griess, who first applied the nitrogenous compounds to wool and silk. Thereafter, laws of dye formation were rapidly formulated. By the end of the century, the dyer and printer had dyestuffs at their disposal which were suitable for all the textile fibers then in use. Most natural dyes had been ousted by the overwhelming numbers of basic, acid, direct, sulphur and insoluble azo dyes formed on the fiber.

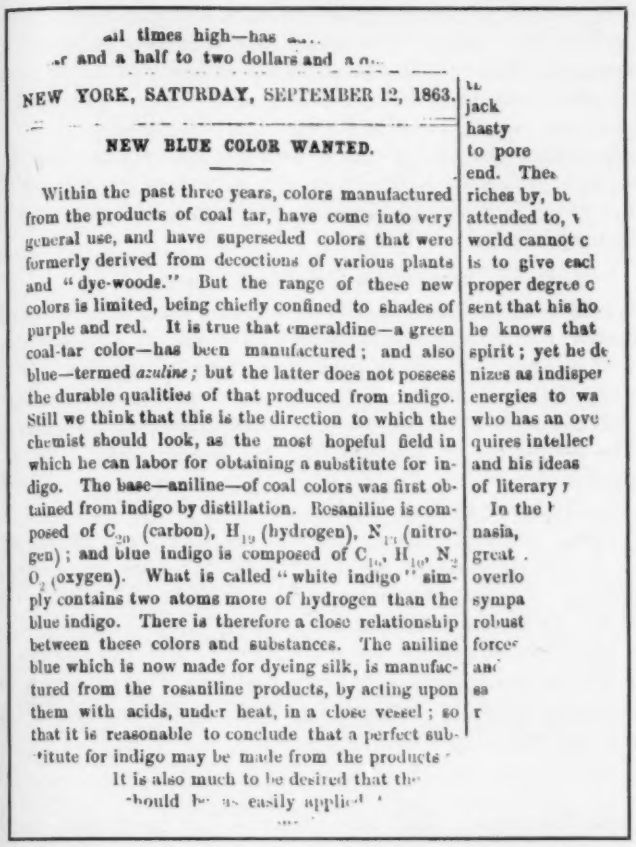
The outcome of the struggle was finally decided when the centuries-old dyes, indigo and madder, revealed their inner structure to the chemist, making possible their synthesis by chemical process.

The cultivation of madder had reached a peak when the chemists Graebe and Liebermann succeeded in extracting alizarine, a dye contained in rubiaceous plants, from a distillation product of coal tar. France alone at the time was exporting twenty-five millions francs' worth of madder. In an attempt to save its madder industry, the French army decreed that its soldiers be clothed in bright red trousers dyed with madder extract — a step comparable to the Dutch boy's attempt to stop the flow of water through the dike with his thumb. But as with many technological advances, benefit to the many brought want to the few. Less than ten years later, France's madder fields lay fallow. Shortly before the turn of the century, Baeyer's discovery of the structure of indigo led to the synthesis of the blue dye and,

in the same way, this brought about the ruin of the Indian indigo growers. In the 1880's, 1,400,000 acres had been devoted to indigo raising in India. By 1912, this had shrunk to 214,000.

The Road to Perfection

Nineteenth Century dyers bent their efforts to emulating nature. The Twentieth Century dyer has set himself the task of outdoing her. A large percentage of the dyestuffs synthesized up to the turn of the century were simple in application and bright in color. But their degree of fastness to light and washing was something less than good. Stuffs dyed with natural madder and natural indigo had withstood the wear of centuries. But the first



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...r and a half to two dollars and a ...

NEW YORK, SATURDAY, SEPTEMBER 12, 1863.

NEW BLUE COLOR WANTED.

Within the past three years, colors manufactured from the products of coal tar, have come into very general use, and have superseded colors that were formerly derived from decoctions of various plants and "dye-woods." But the range of these new colors is limited, being chiefly confined to shades of purple and red. It is true that emeraldine—a green coal-tar color—has been manufactured; and also blue—termed *azuline;* but the latter does not possess the durable qualities of that produced from indigo. Still we think that this is the direction to which the chemist should look, as the most hopeful field in which he can labor for obtaining a substitute for indigo. The base—aniline—of coal colors was first obtained from indigo by distillation. Rosaniline is composed of C_{20} (carbon), H_{19} (hydrogen), N_{3} (nitrogen); and blue indigo is composed of C_{16}, H_{10}, N_{2} O_{2} (oxygen). What is called "white indigo" simply contains two atoms more of hydrogen than the blue indigo. There is therefore a close relationship between these colors and substances. The aniline blue which is now made for dyeing silk, is manufactured from the rosaniline products, by acting upon them with acids, under heat, in a close vessel; so that it is reasonable to conclude that a perfect substitute for indigo may be made from the products ...
It is also much to be desired that the ...should be ... easily applied ...

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The Scientific American of 1863, in a leading article, comments on the increasing use of aniline dyes.

stuffs dyed with the new synthetic dyestuffs refused to remain fast. It looked as if sunlight, the source of color, was as intent on taking away as it was on giving.

But again the retort and test-tube proved their power. The discovery of sulphur dyestuffs yielded dyes much faster to washing and sunlight. The development of dyestuffs on the fiber improved color-fastness because they were insoluble in water.

Then, at the turn of the century, came a most important development. Indigo, the king of natural dyes, and the only vat dye then surviving, encountered its first rival. Synthetists had worked for many years to dethrone natural indigo. Now in a substance derived from anthraquinone, a compound which had hitherto been used in the synthesis of alizarine, they found the answer. By 1905, chemists working for the Swiss firm Ciba had opened the gateway to a whole new realm of vat dyes — based on variants of indigo — from which it was possible to obtain a range of colors throughout the whole visible spectrum. These vat dyes, built upon a basis of anthraquinone and a few other substances, showed fastness properties surpassing those of natural indigo in many respects.

But they were insoluble in water, and were therefore complicated in their application to materials. Twentieth Century researchers set themselves the task of overcoming this bug. By 1924, the first good vat dye, which was also soluble in water, was developed. The printer who had had to struggle with the old vat dyes was able with this stabilized leuco form of dye greatly to simplify his procedures.

Twentieth Century research has also licked other bugs. It had, for example, been known for a long time that the quality of certain natural dyes like madder, logwood and cochineal depended on the use of metallic mordants. The Nineteenth Century applied this knowledge to a large number of direct cotton and acid dyes by using metallic salts for their fixation, these being added to the fiber either before or after dyeing. The Twentieth Century has carried this further in order to simplify application — by incorporating the metal in the dyestuff molecule. Substantive dyestuffs of this kind, like the cuprous Chlorentine Fast colors, have solved the problem of producing direct dyeings on cotton and rayon which are fast to light.

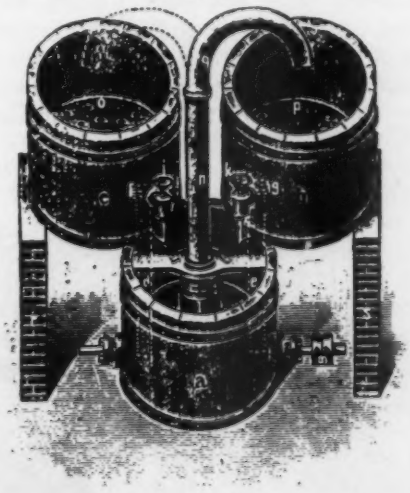
The Twentieth Century has also produced direct cotton dyes fast to light and washing, such as the Corpantine colors. And the fast dyeing of wool was greatly simplified by the development in the 1920's of the chrome-complex Neolan dyestuffs.

A Modern Dye Manufacturing Plant

Today, in a plant such as the Ciba Company has recently built in Toms River, New Jersey, four million pounds of anthraquinone vat dyestuffs can be produced yearly. To produce this, the $12,000,000 Toms River works requires a total of about ten thousand tons of various chemicals, the chief ones being sulphuric acid, caustic soda, muriatic acid, phthalic anhydride, ammonia, benzene, nitro-benzene, glycerine and alcohol. To handle and process these, the plant is equipped with machinery that ranges in size from microscopes to giant autoclaves weighing thirty-six tons apiece. The whole installation, covering no less than 35 acres, with its operating, research and development staffs, its control laboratories, its measuring tanks, its giant sublimators, its great kettles — 125 of them, varying in capacity from 300 to 5,000 gallons — would have been inconceivable to the men who lived in Perkin's day.

The profound alchemy of this, the most modern dyestuffs plant in the world, has been made possible by the union of chemical research with production. The discoverer of the first synthetic dye was both scientist and manufacturer, and combining research and production has remained a characteristic of dyestuff manufacture since the beginning.

By no means have all the problems in this manufacture been overcome or settled. Industry still keeps the dyestuff chemist in the universities and in the manufacturing fields working hard. First, both the fastness properties of many dyes and the completeness of overall color ranges leave much to be desired.



Second, the form in which the dyestuff is delivered to the user still offers a number of difficulties. For example, acetate rayon could not at first be dyed with the usual dyestuffs. Had the dyestuff not been converted into a very fine dispersion so that the

(please turn)

fiber could retain it, printed rayon, such as we know it, would not have been possible.

Pigments, both organic and inorganic, are playing an increasingly important part in modern dyeworks. And the new man-made fibers are also greatly multiplying the dyer's problems. Add to this the progressive advances made in the technology of dyeing and printing, which in the case of continuous dyeing methods involve the special preparation of pigments. Today a large part of the research work done in connection with these problems is carried out by the dyestuffs manufacturers themselves working in close contact with the dyers and printers.

Color and Industry

We take for granted the miracle of cheap, effective color today, as we take for granted so many other modern miracles. It is only when we stop to examine the miracle that we realize what modern production of color means to us.

Our clothing, homes, automobiles, furnishings, books and magazines, and our business practices have all been revolutionized by the ready availability of synthetic colors. Changes wrought in our clothing and our homes are by this time a familiar story, but if we look back only a few decades to our business practices, we can see that there too change has taken place under our very eyes.

Before World War I, manufacturers thought hardly at all in terms of color. Tableware was unornamented for the most part; display rooms and store windows, when painted at all, were painted in the plainest of colors; black was the color (remember women's black stockings?) considered most suitable for most manufactured articles, from Fords to children's toys. The absence of color tended to perpetuate itself; no one actually thought in terms of color.

With the War and after, in the release it gave, color began to come into its own. Manufacturers began to invest surplus profits in color experimentation. The response on the part of the buying public was overwhelming. Business jumped on the bandwagon in every possible way, but many business men then still felt that color was a fad which was bound to go the way of all fads. No one bothered to concern himself with the scientific aspects of color — to suit the color to the product, to the preferences of the buyers, to the environment for which it was destined.

As soon, however, as industrial leaders realized that color had come to stay, that it represented a logical step forward in the artistic development of the people, the consideration of pleasing combinations of color began to enter into practically every phase of industrial enterprise.

Today automobiles are color-styled; no less so are factories. So also are homes, office buildings, waiting rooms, lobbies, trains, airplanes, department stores, chains of gas stations, chains of super-markets. Surgeons order their operating rooms to be painted in certain colors, cafeteria owners know the power of arranging the colors of foods to their best advantage, institutions are aware that room colors can affect the well-being of their patients.

Color, at last, is recognized for something more substantial than its surface value. Its power to arouse emotion, to stimulate buying, to provide the background for the proper display of merchandise and to decrease fatigue and eyestrain is increasingly understood with each passing year.

The promiscuous introduction of new colors every season is fast giving way to a gauging of the public taste through color surveys. This market testing, by eliminating guesswork, whim and hunch, reduces the risks to the business man of having arbitrarily decided upon the wrong color for his product. It was finally necessary for Ford to forego black and give his customers the colors they wanted. It was similarly necessary for bathroom tile manufacturers to forsake white tile in favor of the beautiful colors they now offer. In both cases, color surveys provided the information needed to style the new line successfully.

Pre-testing consumers' color preferences in this way is a procedure still new, but increasingly necessary as competition grows more intense and products vie with each other for the consumer's dollar.

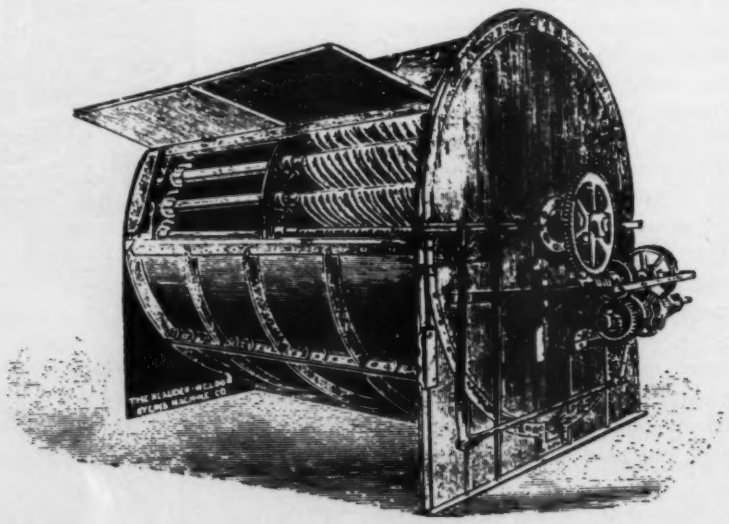
Escape from Standardization

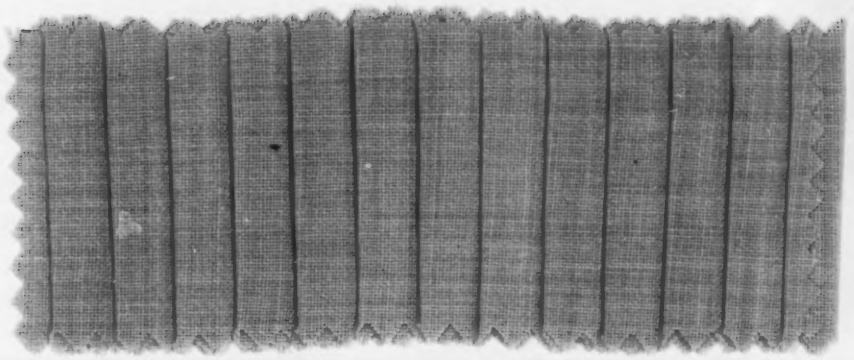
We have learned comparatively recently that new, smart and attractive merchandise sells more easily and at a better price than that which is merely useful or cheap. Correct color has become the most important single factor in this lesson for it affords the most effective low cost escape from standardization.

The combining of lighting with the use of color, too, is a comparatively recent development. It is now recognized that practically every kind of merchandise has its own light absorption factor and that illumination that is good for a fur department is not necessarily the ideal light for rugs, upholstered furniture or linens. Department stores, once notoriously improperly lighted, are calling in the color engineer to cut down the merchandise returns caused in great part by lighting so poor that colors could not be truly matched. The most progressive among specialty shops, drug stores, book stores and food stores are following suit.

* * *

Color has come a long way from the first berry stain to the modern dyestuffs plant and the color engineer. It will go still farther in the future. Color will be used increasingly to make life more harmonious, to keep us in a better frame of mind, to make us buy more readily, sell more readily, sleep more readily, recover more quickly. We may, tomorrow, have colored concrete roads where signposts are unnecessary. We will certainly have more colored buildings and skyscrapers than we have now for they are already on the way. Color has come of age, yes. But the ages that stretch before it should prove as exciting as those it has already traversed • ***END***





A NEW BASIC FABRIC

Last May, in a showing at the Waldorf in New York, the new Lorette fabric was introduced. Since that time it has found enthusiastic acceptance with retail stores and the consumer.

WHAT CONSTITUTES a basic fabric? Many answers might be given to this question, and we may perhaps say that it is a fabric which possesses some unique quality of its own that has a universal validity in relation to its use by man.

There are many such fabrics. Some indeed are so old that nobody has recorded the time when they first were loomed. Well-constructed hand-woven cottons were in use among the South Americans and linens among the Egyptians as early as four or five thousand years ago. Others such as Lorette, did not exist a decade ago.

How does such a basic fabric come into being?

We often assume that innovations take place almost by accident. Like Topsy they merely grew, we conclude, and in this we overlook the complex process of constructive thinking and intelligent merchandising which must go into the development of a new fabric and achieve acceptance for it. For a fabric may have universal qualities, but unless it acquires wide use within its field it cannot properly be called basic.

When it was announced that Orlon was going into pilot plant production, the planners and technicians at Deering, Milliken conceived the idea that the new fiber—the product of a great chemical industry—was no longer a novelty or experimental product, but was now capable of playing a major role in the textile economy. It was foreseen that as soon as the pilot plant stage was passed full scale production would begin.

Looking Ahead

It had long been felt that the future of woolens and worsteds in the mass market lay in the blending of pure wool with man-made fibers. Among the experiments conducted with Orlon and other types of fibers in all practicable blends, those with wool occupied an important place, and it was in a blend of 55% Orlon with 45% wool that a perfect blend was considered to have been reached. In reaching it, even after the proportions had been found, exhaustive experiment took place to find exactly the correct treatment in blending, spinning, weaving, and finishing — the four basic processes in creating any textile. It was regarded as perfect because it retained satisfactorily the chief qualities associated with woolen fabrics; in addition, it provided a superior combination of softness, bulk-and-lightness, as well as an improved launderability and an ability to retain pleats when laundered. This is the fabric sold today as Lorette.

During the period of research and development by Deering, Milliken an interesting and important fact was discovered. With pure wool the finest yarn that could be spun on the woolen system was a five-run yarn. Finer yarns could, of course, be made on the worsted system, but a certain soft hand was sacrificed in the process. With the Orlon wool blend seven-run yarn could be spun on the woolen system, thus enabling the production of finer, lighter and softer fabrics retaining the quality of a woolen fabric.

In accordance with the level of thinking which from the start had characterized the project, Deering, Milliken capitalized on this discovery by beginning construction of a new mill of the most modern type both in layout and equipment — the Hatch Mill at Columbus, North Carolina — for spinning seven-run yarns on the woolen system.

Fulfillment of an Aim

It should be emphasized that during the two developmental years of research, the primary aim of Deering, Milliken had been to produce a fabric valid in terms of use, based on the functional qualities of Orlon, on constructive thinking, and on exhaustive testing under all conditions.

Why should Lorette be classed as a basic fabric? With the sole exception of dyeability, in which some slight limitations at present remain, Lorette, if properly blended, spun, woven, and finished, has all the traditional merits of wool. In addition, it can be washed up to full American Institute of Laundering standards, and finally, it will, in washtub or washing machine, retain pleats satisfactorily, although the pleating is not pre-set.

Among the important results of the launderable blend is the fact that white — a color not popular hitherto in mass woolen fabrics on account of upkeep cost — is already increasing in popularity and volume, since white Lorette, even in pleated skirts, offers no unusual problem of upkeep.

* * *

Thus Lorette possesses some entirely new and unique characteristics and these give it a universal validity for manufacturer, retail store, and consumer. This validity is no longer a matter of speculation, but has been proved during recent months by nation-wide acceptance among all classes of the public.

THE CONSUMER

The millman, the converter, the apparel manufacturer, the retailer, the ret
clerk . . . all constantly use textile words and phrases as selling blandishment
all assuming that Mrs. Consumer knows what they're talking about. Sadly enoug
a good deal of it is incomprehensible to her. And so writer Cora Carlyle gather

Q. Is there any advantage in the use of modern branded laundry starch, which is more expensive, over the old-fashioned corn starch?

A. The modern starches usually have an added wax-like ingredient which makes ironing much easier. This waxy substance dissolves completely and surrounds the starch particles, making a smooth surface over which the iron will glide without sticking. The old starch necessitated rubbing the iron with beeswax to keep it from sticking and collecting starch, which would then have to be scraped off before ironing could proceed.

Another advantage of some modern starches is that they have been treated chemically to dissolve faster and they have a greater penetrating power.

Q. Just what is a broadloom rug?

A. The name itself indicates the meaning, but there seems to be a general misconception among consumers as to what constitutes a broadloom in regard to quality, width, name brand, etc. A broadloom rug is any carpet that is woven on a broadloom, 54 or more inches in width, as distinct from a width of 27 or 36 inches. The term does not indicate any particular type, grade or quality of floor covering. There are no seams in a broadloom.

Q. Should I expect a 60-gauge nylon stocking to give better wear than a 51-gauge?

A. It must be first pointed out that the great hazards to long wear for nylon stockings of any gauge are pulled and broken threads from contact with rough fingernails, furniture and rough surfaces where one might hang stockings to dry.

The nylon thread used to knit any gauge hosiery is very strong and tough and will break only through carelessness or abuse. The 60-gauge has a more delicate thread than a 51-gauge, but if you treat the former with care and take ordinary precautions long wear will be assured. It is suggested that you buy 51-gauge for active, daytime wear and 60-gauge for evening or dress-up wear. The same handling care should, of course, be given to both types.

Q. I have been confused when I have bought fifteen-dollar girdles and then seen similarly styled girdles selling for five dollars. Can you tell me what the differences are other than price; and why there is such a range in price?

A. A girdle is an intimate garment, one worn next to the skin. And this is a reason why you should definitely inquire about the girdle construction because it must fit well at all times, or it will become useless to you. The lower priced garment may be satisfactory for some figures, but it is likely to be cut straight from top to bottom. The better types are generally cut in curves and afford better conformation to your figure at all times.

The better article has better seaming and better inside finishing so that there can be no irritation to the skin. You will also find that there is better elastic used, which means more stretch and longer wear. To summarize, the higher priced garment retains its shape longer through repeated washings and actual wear. The lower priced garment may have similar appearance but not the staying powers.

Q. Having read in several fashion and pattern news items that rick-rack braid is a popular finish for cotton dresses this season, I bought some to use in making dresses for my young daughter. It seems, however, quite a task to sew around the V-shaped edges and I am wondering if I am doing it correctly.

A. The application of rick-rack as a finish or trimming is relatively simple. You need not even turn under an edge to which the braid is applied unless the fabric frays easily. Merely guide the sewing machine foot along the center of the braid and do not try to follow the V-shaped edge. This sewing method will leave the edges free, so that a rounded corner or design can be readily followed.

Q. The vogue of dark felt and straw hats piped and trimmed with white fabric appeals to me very much, but I hesitate to buy one because past experience has taught me that the original fresh whiteness soon becomes drab with soil and I have to *retire* the hat. Is there any simple method of cleaning the white parts?

A. If the trimmings are of rayon, it is suggested that you use carbon tetrachloride, procurable in any drug store. Place the soiled area against a terry towel, and work carefully so that the fluid does not touch the rest of the hat. If made of cotton, apply peroxide and, here again, be careful that the solution does not come in contact with the hat itself.

Q. What is the difference between a one-bar and a two-bar tricot? I have noted these terms in department store advertising.

A. In the manufacture of a one-bar tricot only one yarn is used to form the knitting stitches; in a two-bar, there are two yarns and they are locked together. This results in a fabric that is more durable, more run-resistant, and is desirable for many more fashion purposes.

Q. Can you furnish me with a definition of faggoting?

A. Faggoting is a type of stitching which appears like the figure 8 and can therefore give and take movement between the edges which it joins. It is made usually with threads of considerable strength since they have to hold together two edges of fabric where strain is exerted. An example of this would be the two vertical edges of a girdle fabric. The thread used has some stretch and recovery properties.

WANTS TO KNOW...

group of typical Mrs. Consumers before each issue goes to press . . . asks them what they'd like clarified in textile terms . . . and puts the questions to Dr. George Linton, Textile Editor. Here is the latest group, and the answers may provide illuminating information for the benefit of many readers.

Q. I have seen the term *greige goods* at various times; what is the meaning of the term?

A. Strictly speaking, it is an incorrect popular use of a term to imply *grey goods*. Actually, *greige* refers to yarns or fabrics before they have been bleached, scoured or dyed. They might be off-white if made of cotton, ivory or light yellow if made of silk.

In popular parlance today, greige signifies acetate, rayon, silk and the synthetic fabrics as they come from the loom ready for dyeing, bleaching, scouring, finishing, etc. The word *grey* is used to signify cottons, linens and woolens and worsteds as they come from the loom. In most mills, however, woolens and worsteds from the loom are referred to as *loom goods*.

Yarn- or skein-dyed cottons, for example, which come from the loom with the color pattern are also referred to as grey goods. The broad, general interpretation of today seems to imply any fabric just off the loom, irrespective of color, which has not received any finishing treatments.

Q. I have a silk blouse and silk dress, both white, which have turned yellowish in cast. Both are expensive garments. Is there any way to restore the whiteness? Are there preparations used to whiten silk?

A. To have further wear from the two articles it is suggested that you have them dyed some color rather than try to restore the whiteness, which would be temporary at best. In addition, the work would have to be done by an expert in the field. Some dyers use a very diluted pigment blueing but there is the chance of unevenness and a novice should not attempt the work. Preparations on the market to whiten silk are not, as far as we know, sold retail.

Q. May I successfully launder my daughter's quilted skirts and lounging pajamas and be assured of good results? So far, I have had little luck in this, to me, irksome task. One quilted robe shrunk badly when I washed it. It was too large to handle by hand and the work was done in the washing machine.

A. Unless a quilted garment bears a tag stating that it is washable, it is recommended that it be dry cleaned. In a quilted garment there are four factors to consider: 1, The top layer; 2, the filling; 3, the inside layer; 4, the thread stitching.

To be truly washable, the top and the inside layers must be pre-shrunk and color-fast to washing; the filling should be of white material and not grey or brown as has been found in some garments. A color other than white used for filling would stain on treatment. The quilting threads should be prepared so that they will not tighten up and pucker, thereby affecting the motif or pattern. All of the foregoing qualities add to the total manufacturing costs, so that they are apt to be rarely obtainable. Unless reliably labeled as being able to withstand washing, it is better to send the articles to the dry cleaner.

Q. I am an inveterate home sewer. I have been using nylon thread for making nylon garments, slipcovers, etc. But now that I have bought some Dacron yard goods, what sewing thread should I use?

A. The Spool Cotton Company has come out with Dacron thread, and while at present it is only in white, colors will follow very shortly. You are wise in endeavoring to obtain sewing thread that corresponds exactly with your piece goods content. You will then be assured that there will be no puckering, shrinkage or looping after the garment begins to see service.

Q. Just what is a *third-dimensional pattern* in a fabric? Recently I attended a meeting of the Women's Club in my city and a fashion expert talked about third dimension in patterns but did not really tell us what they were.

A. This pattern is a raised surface that is usually obtained by means of quilting or embroidering. Many times there is a contrast between the dull and the bright yarns; or there may be an adroit use of different colors for contrast or harmony. Both effects bring out a *relief motif* in the fabric.

Q. It was suggested to me that after I have washed slipcovers for my sofa and chairs I should not iron them, but should pull them over the furniture *while still damp*. Thus, I was told, if there would be any shrinkage, it would take place on the furniture and give a tighter and better fit. I tried the suggestion, but found that the skirt pleats of the covers looked wrinkled and mussed. Furthermore, we could not use the furniture for some time because of the dampness. Please advise me.

A. The practice suggested is not recommended because the final appearance of the covers will not be pleasing; this is because there will be no pressed areas at the loose or flat portions of the fabric. Most slipcovers are made of cotton and this suggests the fear of mildew which may cause rotting of the goods; and the furniture fabric under the covers, depending on the material, may be easily affected by the mildew as well. Such a condition, in the long run, would be more costly than having the covers dry-cleaned outside or doing the necessary work yourself.

Q. I have a black velvet dress which I find attracts lint and dust very easily. I am unable to remove these particles without spending a good deal of time in brushing, which I find irksome. Can you suggest something else?

A. Try wrapping Scotch tape around the palm of your hand with the sticky side out, and proceed to press your hand gently to the fabric. The action should pick up all of the dust and lint. However, use extreme care on pile fabrics such as velvet.

letters to the editor

CLASS WORK AT M. I. T.

To the Editors:

In the fall issue of American Fabrics there is an insert of considerable interest to us dealing with the origins of textile fabrics, entitled *Where Did It Come From?* . . .

May I say also that we are finding the magazine of very considerable value in connection with our class work of instruction in principles of fabric structure and as background material for the work in textile technology. My congratulations personally on an extraordinarily well done job.

E. R. Schwarz
Massachusetts Institute of Technology
Cambridge, Mass.

ENDURING FABRICS FOR FLAGS

To the Editors:

Since the beginning I have been a subscriber to *American Fabrics*, and have been particularly interested in the historical matter you have furnished and the information it has contained from time to time with regard to the qualities and permanence of various fabrics.

In 1905 my college class presented a class banner to the Alma Mater, which was made of red silk, and embroidered. The silk is now falling to pieces and members of the class desire to have a duplicate made. We are anxious to obtain the most lasting materials possible. From my medieval collection I have always been impressed with the relative permanence of velvets made during the later Medieval and Renaissance periods. I suppose one reason for their longevity is the use of vegetable dyes.

We might be interested in either silk, velvet or panne velvet and should be interested to know how some of the rayon and synthetic materials will last as compared with cotton velvets, silk velvets and the silk and velvet products of the Renaissance and Middle Age periods.

I should also be interested to know how wool stands up as compared with silk materials. Any information you can provide in answer to this letter will be appreciated.

May I add that I have always derived a keen pleasure from *American Fabrics*. I remember with delight the number in which you reproduced the Chartres windows.

Raymond Pitcairn
Bryn Athyn, Penna.

Editors' Note: In recent years fabrics made of acetate yarns have been considered to give the best and most lasting service for banners and flags. There are, indeed, special fabrics woven from acetate yarns for this purpose.

HELP FOR TEACHING PROFESSION

To the Editors:

Los Angeles Metropolitan Junior College is undertaking the publication of a Business-Education Digest for free distribution among administrators in junior colleges.

Your publications continue to be of much interest and value to the teaching profession. Administrators and instructors alike obtain information that is useful in the conduct of their classes and helpful in grooming their students for placement in office positions.

For use in our Digest, we should very much appreciate the privilege of quoting late information and business procedures from your publication. In all cases the source of the material will be given.

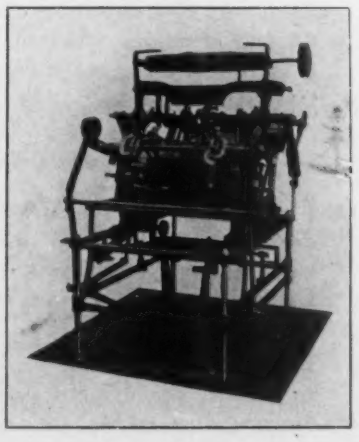
John N. Given, Director
Metropolitan Junior College
Los Angeles, Cal.

ON HEATHCOAT AND LEVERS

To the Editors:

I am enclosing herewith a picture of Heathcoat's first lace machine which you may wish to use. Additional information on Heathcoat and his history can be obtained from the Encyclopedia Britannica . . . In regard to the spelling of the name *Leavers:* whilst the American Lace Manufacturers Association may have adopted this spelling, it is definitely not correct and the spelling should be *Levers*. I use as my authority *A History of the Machine — Wrought Hosiery and Lace Manufacturers*, written by William Felkin and published in 1867, a copy of which I have in my possession and in which there is a chapter on the Levers machine. However, I do not suppose at this late date that Mr. John Levers would take exception to the American version.

Stephen N. M. Biddle
John Heathcoat & Co., Inc.
New York



FOR A LIBRARY OF FABRICS

To the Editors:

We are constantly having students from nearby colleges come to our store to examine our fabric collection — both the stock we carry and the unusual group of drapery and upholstery samples available for purchase on special order.

It occurred to us that these students were lacking what might be called a *Library of Fabrics* for their use in design and interior decorating classes, and after discussion with the heads of departments, we have been asked to assume a consultative capacity in the building of such a reference library.

Can you advise us if such a thing has been done before, and where? We do not have in mind a museum show, however permanent it might be, but a continuously growing collection of samples that will show the trends in drapery and upholstery materials — a veritable fabric laboratory. This is not conceived purely as a design show for it is equally important for the student to see the commercial products which must be studied as the most popular and remunerative from a business standpoint.

Also we would like advice as to the best way to approach the collection of these fabrics. Locally we have obtained helpful cooperation from jobbers' representatives who have given us samples of discontinued numbers for the colleges in question. There will be a small appropriation put in our hands for the purchase of samples, but as often as possible we hope to obtain fabrics gratis for the colleges.

The two schools in question at the moment are North Texas State College and Texas State College for Women, both in Denton. If the program develops satisfactorily, I am sure that Southern Methodist University will desire the same service, and in some measure our Technical High School in Dallas.

Such a collection, we feel, used under proper direction, would do much to improve the taste standards of all who must use the collection.

Louise W. Kahn, Inc.
Dallas, Texas

Editors' Note: Miss Kahn will receive gratefully any suggestions and information which individuals or manufacturers may be able to send in furtherance of the project outlined in her letter.

THE COMING CULTURE

To the Editors:

I am deeply impressed with the scholarly manner in which you have succeeded in fusing science, art and philosophy in the presentation of the subject matter of *American Fabrics*. You have achieved a synthesis which may well be the forerunner of the dawn of the new culture which will come with the approaching new age, and the pioneer of the new civilization, which does not discount the fact that all civilizations are based on preceding ones.

Hubert Stowitts
Redondo Beach, California

FIBER BLENDS

To the Editors:

I should like to know where I can find statements regarding the desirable minimum percentage of a fiber necessary, when used in a blend, in order to have an effect upon the wear and care qualities of that fabric? I note that there is a tremendous variation in percentages of the various fibers present in many of the new fabric-fiber combinations. For example, will 12 per cent nylon do the trick for strength and low absorbency in a crepe slip? What percentage of nylon is adequate with wool for dress materials or suiting in order to reduce shrinkage?

Surely the various bureaus and mills have done such testing, but I have been unable to find such information summarized.

Elizabeth Birong
Bozeman, Montana

Editors' Note: There is no single system followed by any one mill or any line of fabrics with regard to blends. Each fabric is constructed individually with its end-use as an objective. In most recent issues of American Fabrics, as in this current issue, there is considerable reference to blends of the new fibers with other fibers, and these might be of information in deducing the purposes of the fiber combinations.

LACE MAKING, 19th CENTURY

To the Editors:

It may interest your readers to recall the method of making lace in use in Bucks County, England, scarcely a generation ago. This district was famous for fine lace and it was made in the long winter evenings by the women in the villages.

Owing to the scarcity of means of lighting, for in those days gas and electricity had not come to the country places, and kerosene was still costly, a single candle was used to provide light for four women. A square wooden stand had a candle socket in the center with four holes round it, one at each corner. In each hole a globe filled with water was placed, which acted as a lense to condense the candle light onto the *lace-pillow* of one worker. Thus four women sat round each working at her lace.

A. Walker
New York City

TRUE OR FALSE?

. . . a linen quiz

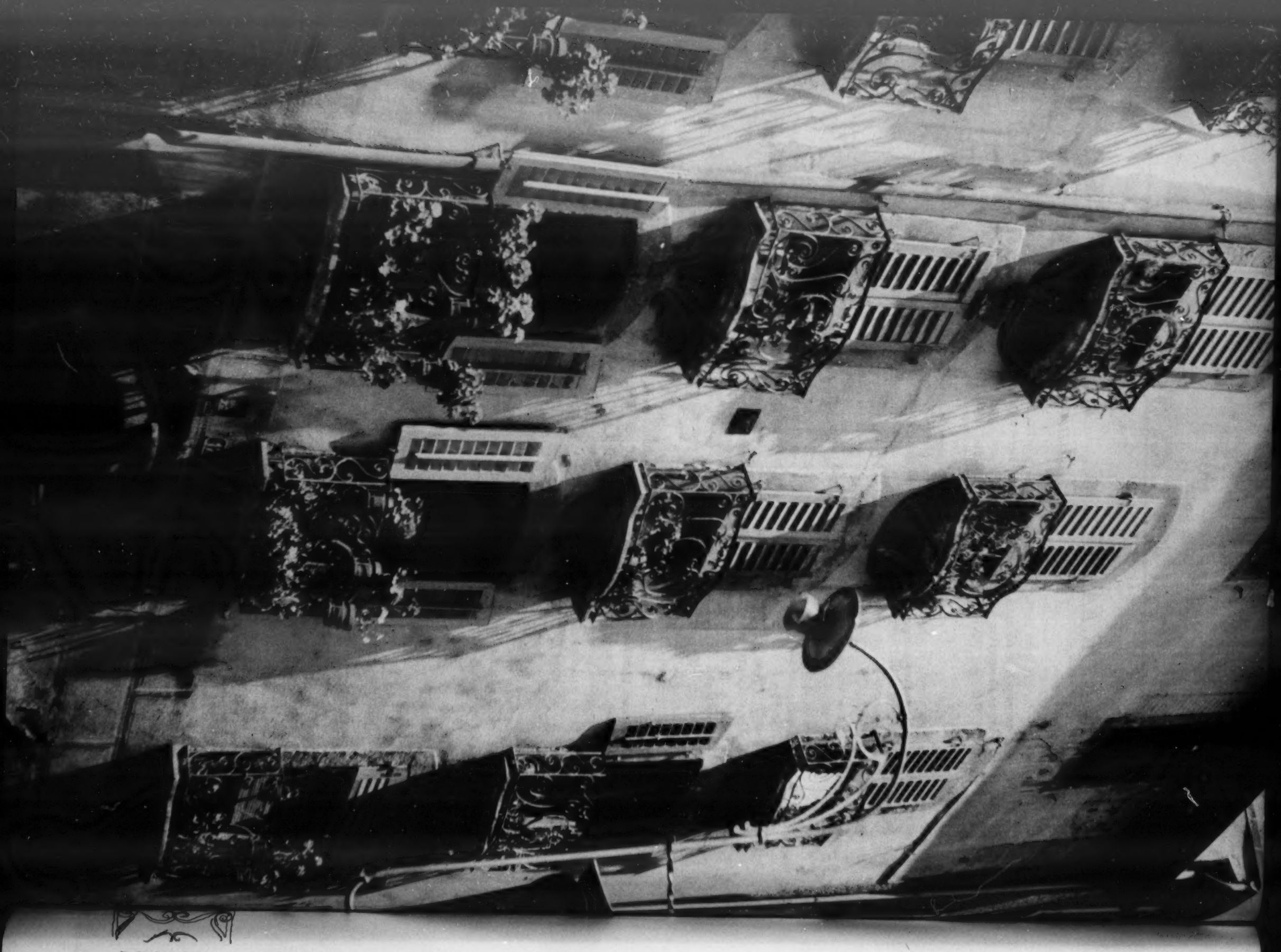
Quiz yourself with these twenty questions, placing a check in the appropriate column. Score 5 for each correct answer, referring to the section below for the proper answers and explanations. Ratings: 90-100, excellent; 75-85, good; 60-70, fair.

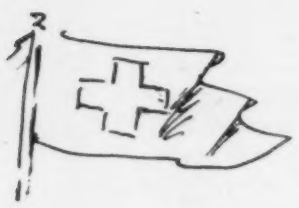
		True	False
1.	Flax grown for seed is planted far apart so the plant will branch and develop more seed. But flax grown for fiber is planted close together so that the plant will grow tall.....	____	____
2.	Linen will absorb water more quickly than any other fabric.....	____	____
3.	Wet linen should not be dried in the sun.....	____	____
4.	Linens should not be stored in hot closets.....	____	____
5.	Fruit juice stains are best removed from linen by soaking the fabric in cold water.....	____	____
6.	Double damask means a damask twice as thick as a single damask.	____	____
7.	The fiber of the flax plant is loosened from its woody core by soaking in soft water.....	____	____
8.	The soaking mentioned above is called scutching.....	____	____
9.	Both spinning and weaving of flax should be done in a moist atmosphere.	____	____
10.	*Over-wefted* means that the weft threads pass over more warp threads than under warp threads.	____	____
11.	Double damask is always a better value than single damask.....	____	____
12.	A linen damask tablecloth is correct in a modern dining room.....	____	____
13.	Butcher linen is a coarse weave dress linen.....	____	____
14.	Linen is stronger when wet than when dry.....	____	____
15.	Flax is the strongest textile fiber.....	____	____
16.	Linen is the coolest of all fabrics.....	____	____
17.	A shire hemstitched hem is hemstitched on only one side of the drawn threads.....	____	____
18.	In handkerchiefs, a cord border is made of bands of fine threads densely woven to give a solid look.....	____	____
19.	Ireland grows more flax than any other country in the world.....	____	____
20.	The designs on most of the better quality printed linen handkerchiefs are done by the screen printing process.....	____	____

* * *

TRUE OR FALSE ANSWERS.

1. True. Tall flax produces long fiber which is required for finer quality linens. *2.* True. The absorbency of linen makes it the preferred fabric for hand towels, dish towels, handkerchiefs, etc. *3.* False. Linen should be dried in the open air, in sunshine if possible. *4.* True. Excessive heat, as well as dryness, will rob linen of its natural luster. *5.* False. Hot water, poured on linen from a height, removes fruit juice stains. Boiling water does not hurt linen. *6.* False. The term double refers to construction, not to quality. In double damask, weft threads pass over seven warp threads and under one; in single damask, over four and under one. *7.* True. Bacterial action in water dissolves the gums which bind the fiber to the woody core. This requires seven to fourteen days. *8.* False. The loosening of flax fibers in water is called retting. Scutching is the beating out of woody chaff until only flax fiber remains. *9.* True. Moist flax fibers are more elastic and therefore less likely to break. *10.* False. In over-wefted linens, there are more weft threads than warp threads to the inch. *11.* False. Due to its weave, a single damask of the same count and weight as a double damask will give better wear. *12.* True. Irish linen damask comes in modern as well as traditional designs. *13.* True. Unfortunately, however, the term *butcher linen* is very frequently mis-used to designate fabrics other than linen. Real linen must be made from flax fibers. *14.* True. Being stronger when wet, linen can be washed without pampering. *15.* True. Scientific tests prove that flax has greater strength than any other textile fiber. *16.* True. The coolness of linen makes it desirable for summer suits, dresses and sportswear. *17.* True. Shire hems have one side of the drawn threads hemstitched. Spoke hems have both sides hemstitched. *18.* False. A band of closely woven fine threads is called a tape border. *19.* False. Ireland is too small to lead in flax production. It does lead in the manufacture of quality linens, for which it also buys the finest of the flax crops grown in other countries. *20.* True. Screen printing is unexcelled for producing lovely color effects.





SWISS FABRICS...A TRADITION OF QUALITY

The textile industry in Switzerland is of ancient origin, for ten centuries mainly confined to the spinning, bleaching and dyeing of linens. Today this industry has expanded to include cottons, rayons, and fabrics of nylon and other man-made fibers.

THE TRADITION AND MANUAL skill of the Swiss textile workers have been favorably affected by Switzerland's special political position, its size and geographic isolation. In the Sixteenth Century French textile technicians found refuge from persecution in Switzerland, as in England, and brought with them the special skills and trade secrets relating to muslin and other fabrics which, until then, had been manufactured in France.

In the Eighteenth Century, when cotton became common in world markets and began to replace linen as a universal fabric, the developed technical knowledge of the Swiss weavers was applied with special effectiveness in the new field. A century later, faced with the competition of the newly-developed steam-powered equipment of the English spinning and weaving industry, Swiss mills, in their struggle for survival, were forced to concentrate on quality fabrics. And for this task they were eminently fitted by the sequence of historical events.

During the Nineteenth Century, the Swiss undertook to construct power machinery for spinning and weaving, since the export of machinery from England, the leading builders of such machinery, was prohibited by law. Thus was begun the technological tradition since associated with such names as Escher Wyss of Zurich and J. J. Rieter of Winterthur, a tradition which has today assumed global influence. It may be mentioned that industrial aspects of this tradition were soon broadened to include the finishing of fabrics.

The Nineteenth Century saw the founding in Switzerland, as in America, of many of the great textile houses which today are bywords in the industry. Among these were the firms of J. G. Nef of Herisau and Christian Fischbacher of St. Gall, established in 1805 and 1818 respectively. (Nef today exports fabrics to the U. S. market under the trade name of *Nelo*; Fischbacher Swiss goods, under the *Fisba* mark.) Other names which may be mentioned are those of Schwarzenbach, founded in 1829; Heberlein, 1835; Stunzi, 1837; Naef, 1846; and Stehli, before 1850.

Around the turn of the century, the finishing industry, developed as a consequence of the discovery of starching in the Sixteenth Century, received a fresh impetus from the development of mercerization, which became a Swiss specialty soon after its introduction. This process, invented by Mercer half a century before, found special applications in the field of muslins, organdies, batistes and other fine cotton fabrics. Mercerization, by giving the cotton almost a parchment finish, so improved the character and possibilities of the fine cottons that it rapidly developed into a main subdivision of the Swiss textile industry.

By combining mercerization with print effects, the most diversified and novel results were obtained. These transformed the basic fabrics to an extent that made them no longer recognizable. Together with the weighting of silks which had by then been introduced, mercerization enabled Swiss fabrics to enjoy a special place in world markets. With the later introduction of rayons, finishing became increasingly important.

The embroidery of fine fabrics had long been in favor in Switzerland because of the suitable nature of the weaves generally used. Although lace had been at one time within the reach of only the few, the mechanization of the embroidery industry in the late Nineteenth Century extended the market to the mass level. Within the present period, between the two world wars, extensive use of embroidery again came into vogue. The result has been new combinations of embroidery, fabrics and lace, with modern color schemes — all of which have stimulated the demand for Swiss goods. Organdies and muslins have remained in use for basic fabrics, but the fibers employed in these weaves have recently undergone modification.

Today in Switzerland, in the cotton and finishing industries, there are some three hundred mills, employing nearly twenty-five thousand people. The annual output of the industries totals some 165,000,000 yards of fabric, much of which is woven from cotton grown in America.

The linen industry, concentrated in the central part of Switzerland, comprises some thirty-five weaving establishments. The essential manufactures include table linens, linens with special patterns, handkerchief fabrics, cloths of whole or part linen for household uses, and clothing and apparel linens.

The silk industry is one of the oldest in Switzerland. Swiss ribbon is world famous. Ribbons of every type are manufactured, and the so-called *Basler band* occupies a unique position in the field. Competition has caused a decline in silk spinning, although the tram and organzine throwing branches have continued to meet domestic requirements. There has also been specialization in the production of sewing and embroidery silks.

Research has been active in specialty products such as hollow

(please turn)

Originality, design and quality have given to the world such fabrics as crisp voiles, gossamer-thin organdies, tissue weight batistes, lawns, muslins, paper-thin chambrays. They provide filmy shimmering cottons in a profusion of textures, weaves, designs and finishes which bring new beauty to the home and fascinating novelty to the latest fashions.

OPPOSITE: *Front of an old building in Sion, Canton Valais, illustrates the traditional Swiss taste, lightness, elegance and delicacy of design.*

filament rayons for tie silk type goods, plushes and velvets. Other lines such as extra-thin and extra-high tenacity yarns have also been developed. Today, as a result, rayons have become, with nylon, keenly competitive with cotton goods in the Swiss trade.

In the wool industry, the Swiss have specialized in worsteds, producing mainly fine yarns for the men's and women's light apparel lines. Heavy woolens have been produced chiefly in the field of blanket cloths. The felting and floor covering industries are small but stable.

In the knit wear industry, cotton, wool, silk, rayon, and, more recently, nylon are in use. These goods are mainly for consumption in the lingerie and hosiery fields, and for women's and children's wear. This branch of the industry comprises about a hundred and fifty mills and employs about ten thousand workers. Its markets are world-wide and involve an annual trade of over sixty million Swiss francs.

The Swiss textile industries have concentrated on quality production. Only by the pursuit of specialized aims has the industry of a small and technically organized country been able to compete successfully in world markets. Based on an ancient tradition of textile skill, the Swiss industry is distinguished for precision and perfection, and enjoys an earned reputation in the field of fine fabrics everywhere.

Definitions . . .

A GUIDE TO BUYERS OF SWISS FABRICS

CELERINA: a word which describes fancy woven Swiss voiles.

CHIFFON SWISS ORGANDY: a Swiss Organdy made from very fine yarns counting 140 to 160. It has the same character of finish and cleaning qualities as Swiss Organdy. Because of its fine yarns, the cloth is softer and more delicate. Because of the skill required in finishing techniques, chiffon organdy is only made in commercial quantities in Switzerland.

CILASILK (REG'D MARK): a Swiss batiste with fine silky hand and permanent luster.

CILANA: permanent crepe effect on plied yarn Swiss voile or full voile.

CILATEX: permanently finished washable Swiss cotton chintz.

CILAPERL: a partly chintzed surface Swiss cotton with blistered effect.

CLOQUE ORGANDY: used interchangeably with Swiss Crepe Organdy.

CREPE ONDOR (REG'D MARK): a creped organdy which has a permanent finish accomplished by chemical means. It varies in softness and crispness and contains partially transparent and opaque areas. Crepe Ondor is frequently given multicolored printed patterning. Original Swiss invention.

CREPERL (REG'D MARK): describes a particular brand of crepe organdy.

CREPE MOSSEUX: a plied yarn voile, shrink proof, of high absorbency with opaque aspect and delustered surface.

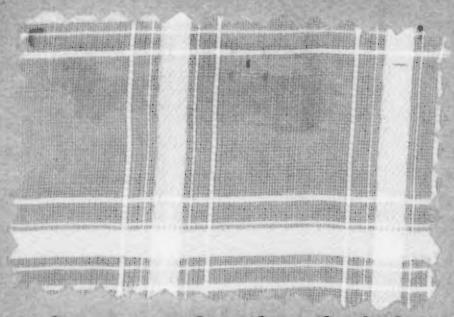
CURLEX ORGANDY (REG'D MARK): used to describe a special type of non-curling transparent organdy or one which lies flat on the table when open.

DAMASK SWISS ORGANDY: an organdy which has the appearance of a raised pattern effect similar to damask, the pattern frequently being opaque and caused by pigment printing, as accomplished by chemical printing means, with the ground usually being transparent. Sometimes combined with regular color printing.

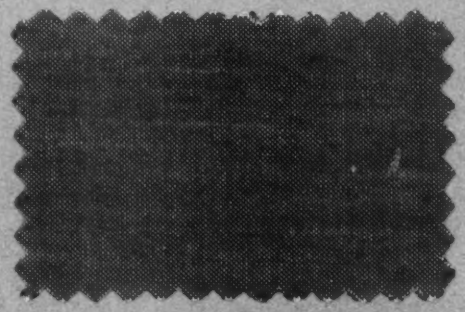
DOTTED SWISS: a cloth which originated with the hand-looms of weavers of Switzerland. The original dotted Swiss was a cottage industry and was invented and introduced in St. Gall about 1750. A number of the dotted Swiss fabrics are still made by artisans in their own homes. The hand woven dotted Swiss is made to a 32-inch finished width. Many

(please turn)

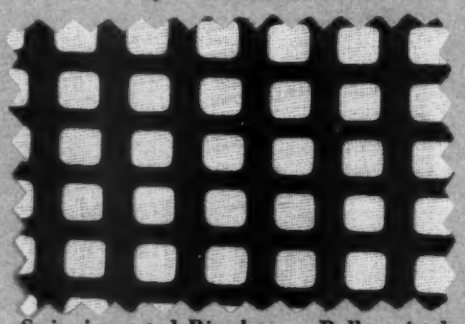
Swiss imported hand-machine embroidered organdy by FISBA FABRICS INC.



Swiss imported novelty voile plaid by TEXTILE LOOMS



Exclusive Swiss imported wool fabric by R. L. DREIFUSS



Swiss imported *Rippletex*, a Bellmanized cotton fabric that needs no ironing or starching, by H. M. KOLBE CO.

Swiss national costumes make distinctive use of white, red and black fabrics and ribbons. That shown above is from Schaffhausen and is distinguished by black pointed silk cap.

Courtesy Ciba Co., Inc.

The distinctive qualities of Swiss cottons result from a happy combination of factors found only in Switzerland. Glacier-fed Alpine streams supply water of matchless purity for weaving and finishing. Inherited Swiss traditions of fine textile production supply a broad, solid foundation for maximum development of the newest and most advanced mechanical and chemical processes.

Swiss Fabrics . . . continued

different types of weave and patterned effects are made in dotted Swiss, varying from single and multicolored dots placed regularly or irregularly on the cloth to combinations of dot effects with yarn-dyed patterns with solid grounds and drawn thread work and to more intricate pattern or design effects. These hand-looms have a swivel attachment which ties in the dots or designs on the reverse of the cloth — hence, a frequent reference to "hand tied dots" in connection with dotted Swiss. Dotted Swiss is now made in Switzerland on mechanical as well as hand-looms.

CAUZANDA (REG'D NAME): another name for Chiffon Swiss Organdy.

HECONDA (REG'D NAME): a crinkled, shrunk finish effect combined with special color printed patterns. The material frequently has a somewhat rippled appearance.

HELVETIAN VOILE (REG'D NAME): a Swiss voile which has been given a chemical finish to make the fabric permanently crisp and, as with Swiss Organdy, able to be washed and dry cleaned, requiring only ironing (but no starch) to restore original finish. Originated in Switzerland.

HETEX (REG'D MARK): an all-cotton fabric with burned-out effects; frequently used on dress goods. The ground of the cloth frequently has a drawn thread effect where some of the threads have been etched away by chemical means to leave the patterns in bold relief.

HEVITRO (REG'D MARK): rayon and spun rayon light weight fabrics made transparent by chemical treatment. They can be washed and dry cleaned and require only ironing to restore their original crisp finish.

IMAGO (REG'D MARK): the designation for parchmentized pattern effects. These pattern effects have sometimes been referred to as white pigment-printed organdies.

MATELASSE ORGANDY: used to describe crinkle surfaced or creped organdy or particularly those which have a slight blistered effect.

MULL-CHIFFON: a very fine Swiss lawn.

OPAL (REG'D MARK): a wool-like finish on muslin, frequently used on sheer cottons and on handkerchiefs. Opal transparent is a transparent patterning on an opaque ground.

PIQUE VOILE: a voile construction in pique effect.

PLUMETIES: a name used interchangeably with dotted Swiss and used to describe the special effects accomplished by the hand-looms. The cloth is finished to a 32-inch width. Many unusual patterns, dotted and striped effects and drawn thread styling, are shown in Plumeties.

SPOT MUSLIN: used to describe dotted Swisses with woven single-colored or multicolored dots on muslin ground and used to distinguish the dotted types of dotted Swisses from dotted Swisses which provide other more complicated pattern effects.

SWISS BATISTE: a sheer opaque cloth which has a high luster due to special finishing and the use of special grades of long staple cotton and Swiss mercerization.

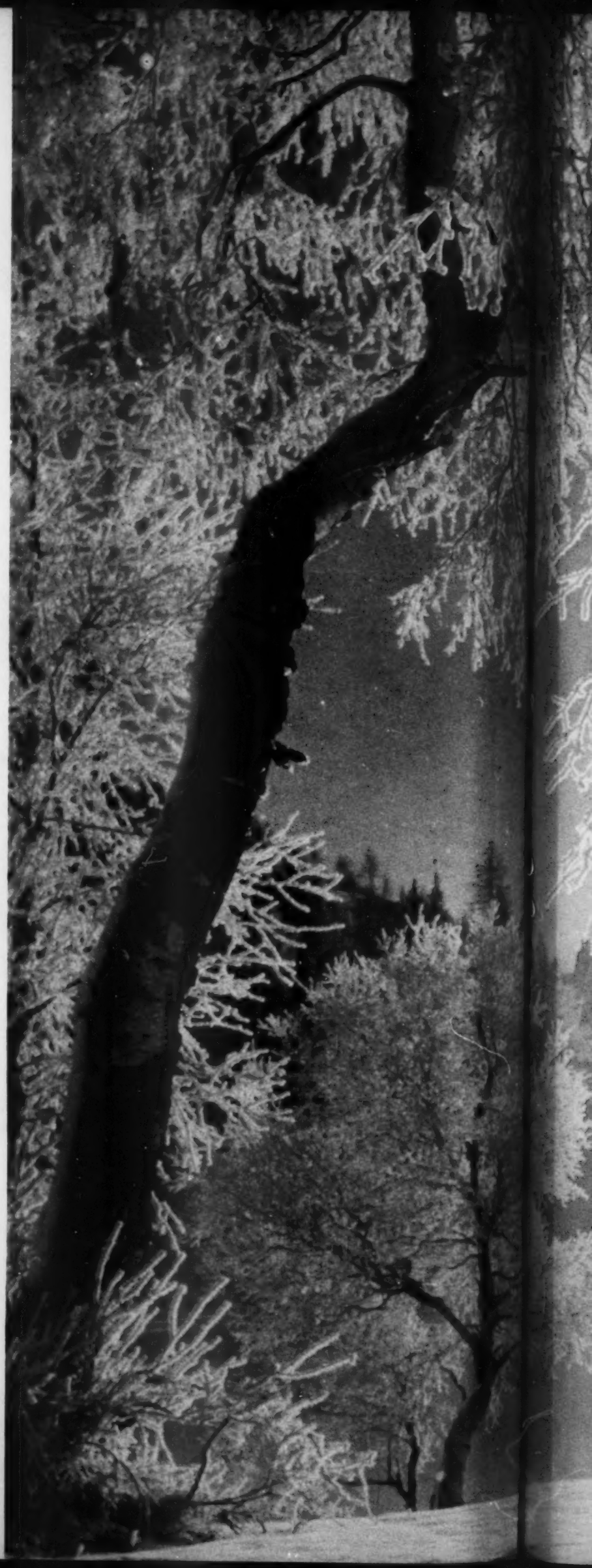
SWISS CREPE ORGANDY: synonymous with Crepe Ondor.

SWISS IRIDESCENT (ORGANDY): an organdy made with several colored yarns which are dyed before weaving and so arranged in both warp and weft as to create a changeable or iridescent effect.

SWISS ORGANDY: a cotton fabric made transparent through chemical finishing which transposes the cloth from its original muslin state into a sheer transparent cloth which can be washed or dry cleaned and requires only ironing to restore its original crisp finish. Transparent organdy was invented and originated in Switzerland. Swiss Organdy in its present character with permanent finish was first introduced in the early part of the twentieth century.

SWISS TRANSPARENT: used interchangeably with Swiss Organdy and to describe the same material.

SWISS VOILE: made from two or more strands of yarn plied or twisted together; available in plain shades, woven patterns and printed design. Also referred to as full voile in comparison to "mock voile" which is made from a single strand of unplied yarn. • **END**



XUM

TUFTED FLOOR COVERINGS

A development of new applications in line with today's engineering in textiles to provide for the consumer's everyday needs.

IT IS USUALLY the consumer who, in the last analysis, is responsible for important innovations in production. When the interior decorators, serving the needs of today's living, began to buy and sew together small cotton-tufted bathmats and throw-rugs to fill the demand for floor coverings suitable in color and texture to modern decoration, and more easily cleaned than the classic Axminster, Kidderminster and other types of rugs, a new trend was initiated.

The history of carpets had undergone few basic changes during the centuries. The process of tufting knots of colored wool into the weft threads by hand prevailed from the earliest times until the invention of steam-driven jacquard machinery in the Nineteenth Century. This process has been associated with the names of Erastus B. Bigelow in this country and Crossley, Templeton, Humphreys, Southwell, and others in Europe. The development of tufting machinery followed the lines of the hand-making processes; the resulting carpets were limited in production only by such factors as the rapidity with which this process could be employed in terms of machine-speed, strength of materials, and fineness of weave.

The Tufting Process

Parallel with the hand-looming of carpets, the hand-tufting of rugs had developed. The process was basically the same, but differed in that tufting was placed in an already woven piece of fabric rather than being effected simultaneously with the weaving. Although the possibilities of machine operations had been investigated for the production of mats, candlewick ornament bedspreads, and the like, no machinery had been constructed with more than a few needles, and the process could not therefore be used for the larger sizes of household rugs or broadloom-style floor coverings. However, there was no reason why such machinery could not be made, except the technical difficulty of adapting existing machines to multiple operation.

One of the first firms to explore this potentially advantageous situation was Cabin Crafts, a division of West Point Mfg. Co. Inc., which already had a score of years' experience in tufting operations and which had benefited from the developing interest in tufted decorative rugs. Cabin Crafts held a secure position in the industry, and capitalized on the authority of an established reputation. Increasing the needle capacity of existing tufting machines, Cabin Crafts, in the space of several years, built machines capable of serious competition with established power-driven carpet looms.

The basic technique of the tufting process consists in setting rows of tufts in a heavy quality cotton duck sheeting which is then shrunk, thus locking the tufts firmly in position. This sheeting is then backed with a special type of latex cement, which seals the tufts and prevents wear and slip. The cementing simultaneously incorporates the tuft threads into the continuous carpet fabric.

The most startling side of Cabin Craft's development proved to be the production speed which could be attained by a machine tufting broadloom the new way, producing some twenty times as much carpet per hour as the traditional power-driven looms.

The new tufted carpet was not of inferior quality. Wear tests were conducted with every type of fiber used in the new technique; all produced satisfactory results. The wear revealed by the tests made on standard test equipment showed that the new tufted rugs were at least equal, and in some cases superior, to the loomed carpets to which the public was accustomed. Moreover, the rugs proved easy to clean and easy to install. Although the new techniques were evolved in terms of cotton rugs, the

process can be applied to every standard fiber. The special rayon fibers now available for the carpet industry have been utilized with especial success.

The New Machinery

Today's broadloom tufting machine requires some 10,000 pounds of yarn for a complete load. It employs 650 to 850 needles, producing broadloom up to 15 feet wide at a rate as high in some cases as 4800 square yards per day. Some two miles of copper and aluminum tubing conduct the yarn in frictionless conduits to the working needles of the machine.

These machines have been in operation for only the past two years. In 1949 the industry produced and sold some 20 million square yards of cotton floor coverings. In 1950 the sales were 33 million square yards, and in 1951 they reached nearly 42 million square yards.

These figures seem to suggest that a revolution is taking place in the techniques of floor coverings manufacture second only to the application of steam-driven machinery a century ago, and it is significant that several major carpet manufacturers are now installing tufting machinery.

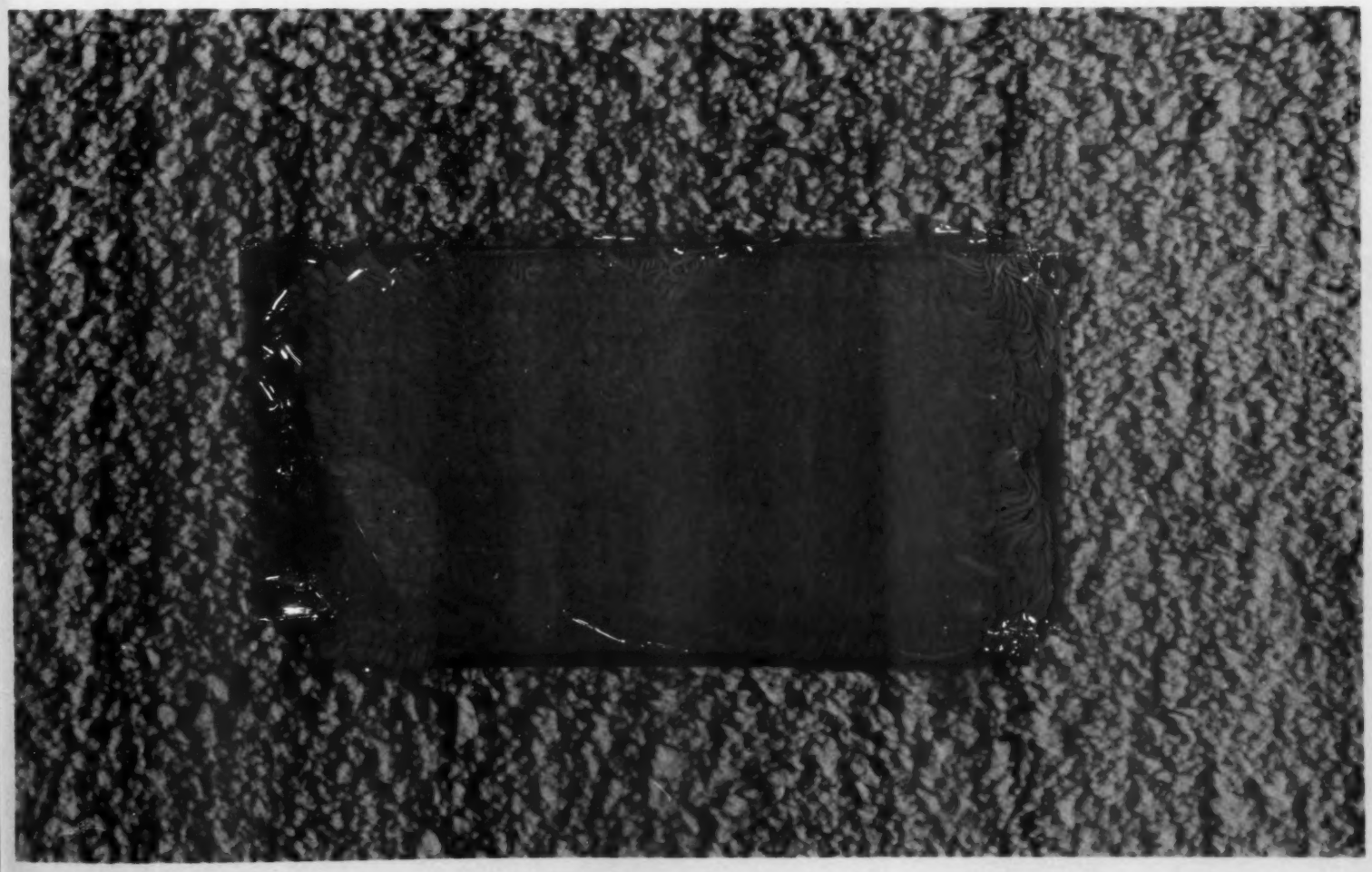
At present plain colors prevail; one firm alone features over twenty in its line. Sculptured edges have been introduced and are popular as a decoration, but full patterned color effects have yet to be practicably achieved. They are now produced only by special expensive procedures on small machines.

Such developments will follow in the wake of increasing consumer demand. For the present the remarkable accomplishments of the new textile engineering techniques will be watched with interest by manufacturers, retail stores, decorators and the public.

(please turn the page)

STATISTICS ON TUFTED COTTON CARPETS BATHMATS & SCATTER RUGS 1939 THROUGH 1951

Year	*Bales*	*$ Volume*	*Sq. Yards*
1939	7,590	1,838,197	1,209,340
1940	8,000	2,833,136	1,867,408
1941	9,237	3,394,385	2,059,209
1946	98,805	30,660,676	8,233,760
1947	109,450	39,237,824	17,439,033
1948	115,957	41,345,583	18,375,815
1949	136,000	50,006,150	20,002,460
1950	167,040	72,586,450	29,034,580
1951	192,150	91,847,700	40,821,200

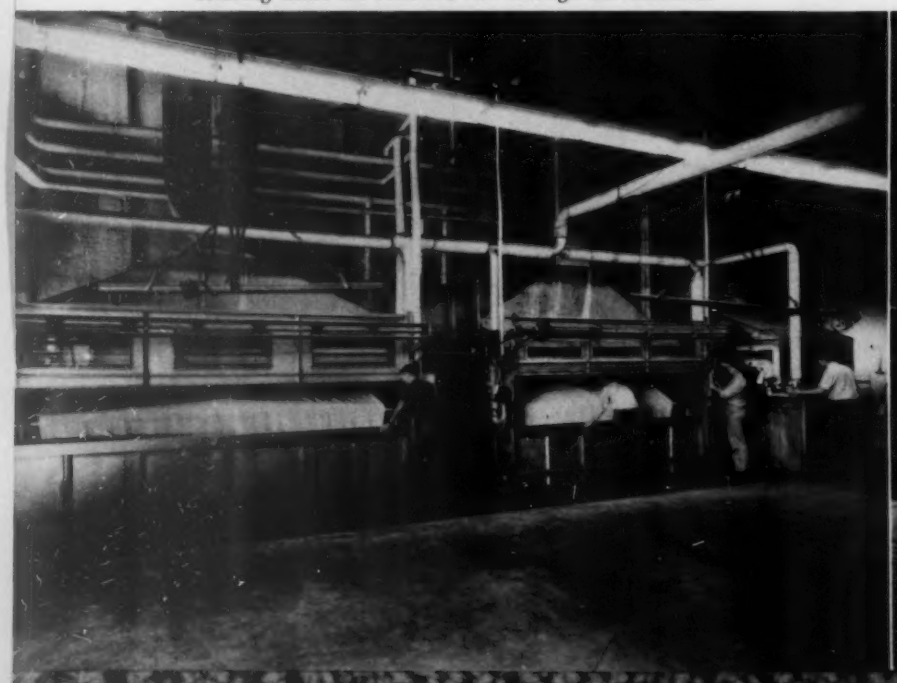


1. *The first stage in manufacture is the thread-up which calls for up to six tons of yarn on cones for each tufting machine. Here the thread is being "pig-tailed" together to insure a continuous run as each cone is exhausted. Thread runs to needles through metal tubes.*

2. *After the thread-up of all needles is completed, the sturdy duck backing into which the tufts are knotted is fed into the tufting machine. The closeness of the tufts varies according to the number of needles and stitches per inch of length and depth of the carpet.*

Eight Key Stages in the Manufacture an Dy

5. *The dye becks below take three different size rolls. This dyeing operation must be under constant supervision in order to avoid the slightest change in temperature or variation in distribution as to coloring while the rolls are run through the machine.*



6. *Drying is accomplished by feeding the lengths of carpeting into a giant dryer. It there passes under heat lights and fluffing equipment and finally it goes through the drying cabinet where hot air completes the drying and fluffing. It then receives a fresh inspection.*

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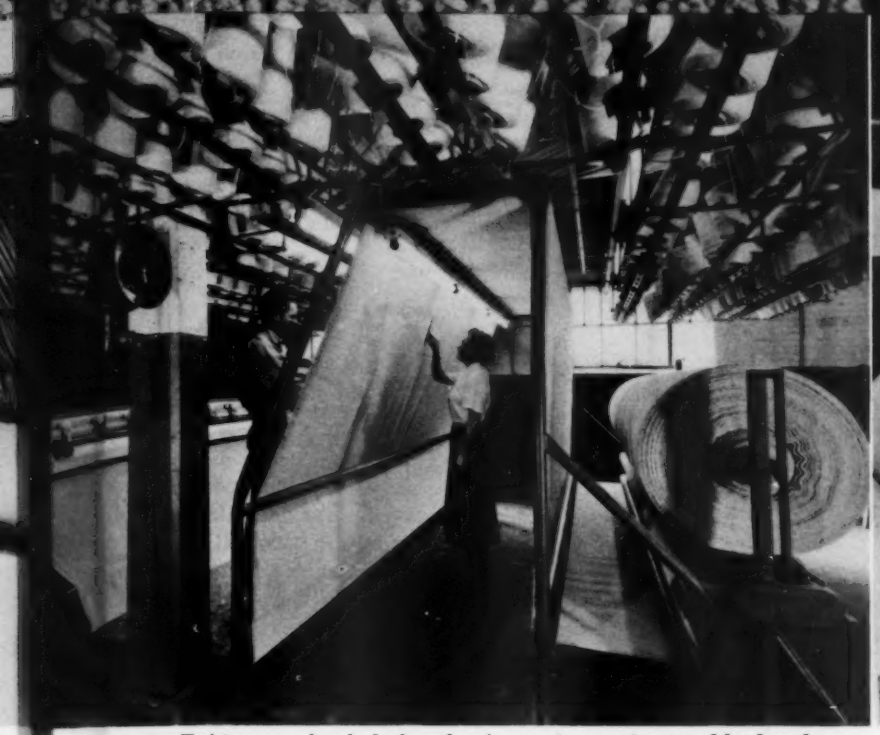
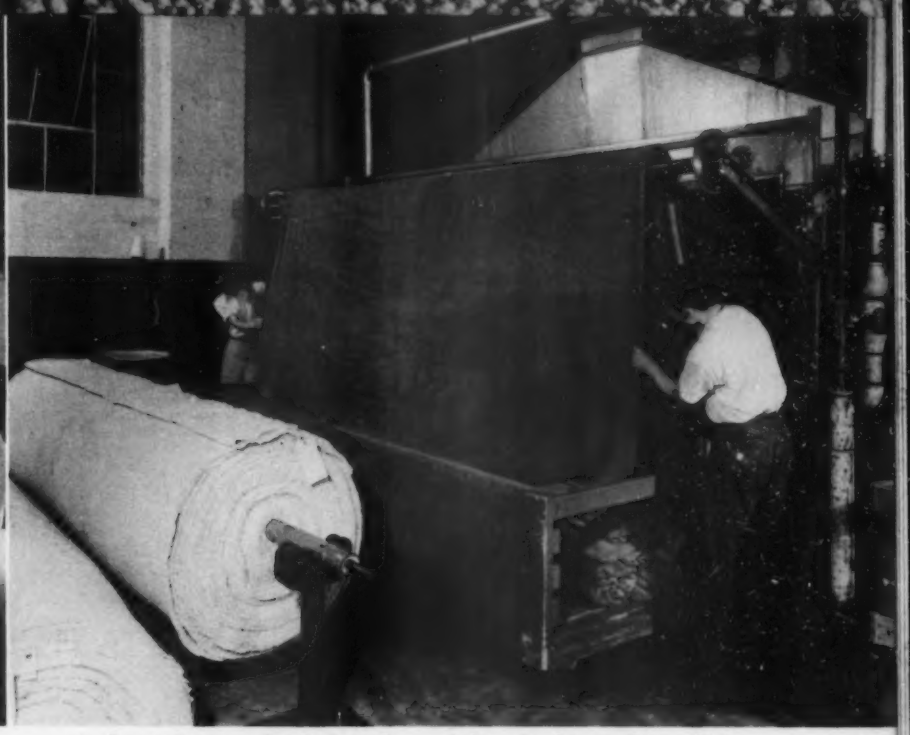
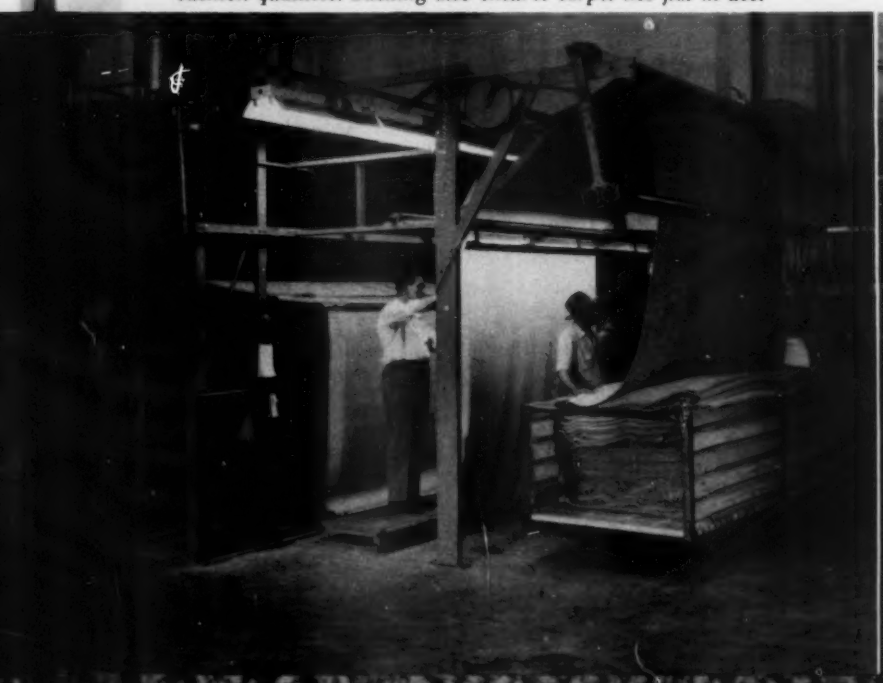


3. *Tufting completed, the lengths of carpeting are inspected back and front as each length comes off the machine and is rolled. Above are seen the cones of yarn and threads running to the banks of needles at left of the picture. Largest machine contains up to 850 needles.*



4. *Inspection completed, the rolls are fed to the dye machine which handles the dyeing of carpet up to 15 feet wide and 360 feet long. The dyeing process is carried out at high temperatures, the heat being supplied by live steam. Perfect uniformity is requisite.*

Dyeing of Cotton Tufted Floor Coverings



7. *The completely dried carpeting is stacked in folds preparatory to receiving the final backing, which seals the tufts in position, protecting them from wear, giving the carpeting firmness, non-slip and cushion qualities. Backing also ensures carpet lies flat in use.*

8. *After the backing has been cured in the curing oven, the final inspection begins. Close watch is kept on every part of the carpeting and any excess yarn is trimmed off by hand to ensure perfect evenness of surface throughout, especially vital in made-up carpets.* END

XUM

A success story in handweaving comes from Thailand through the Economic Commission of the United Nations dealing with Asia and the Far East. The conclusions reached by the Commission are valid not only for the industry they had under survey, but for handweavers here, because they illustrate basic principles in creating a market and building up a hand-made product under present world conditions.

Hand-loomed Silks from Thailand

Princess Amelia Rangsit in traditional Thai silk court dress. The mirror beside which she stands illustrates the fine hand decoration which is part of the Thai tradition.

FOLLOWING THE WAR there were hand-looms idle everywhere in Thailand, and weavers who had no outlet for their goods. These hand-looms existed in substantial numbers; there was one in most farms, and in some villages as many as a hundred and fifty might be counted. An endeavor was made by an enterprising American who had seen war service in Thailand to organize these weavers within the scope of existing conditions and thus to bring some stability, and even a degree of prosperity, to the section of the population chiefly concerned.

During the five years that have elapsed since 1946, this disinterested attempt has proved highly successful, and the Economic Commission of the United Nations, in reporting on the area, attributes this successful development to the following causes:

1. Local equipment for spinning and weaving was used. Because thus only a few minor innovations were needed, a large outlay of capital was not necessary.

2. There was concentration on fabrics using local materials. This helped to keep production costs down and it resulted in manufacture of a unique product, like no other silken fabric. If imported silks from Japan or China had been used, the product would have resembled Chinese or Japanese silk goods and would have been proportionately weaker in meeting competition in overseas markets.

3. Textiles from other countries were not copied in design, color scheme, or weave, but the standards aimed at were those of the best and most beautiful of the local products available in collections and museums.

4. The best dyes obtainable in the world market were used, careful and exact adherence to formulae giving greater uniformity than had been possible before. As a great part of the export business rests on samples, by these methods customer confidence was established and increased.

5. With a developing local and export market, the industry is today assured of a more or less steady outlet; at present the demand is still increasing rapidly.

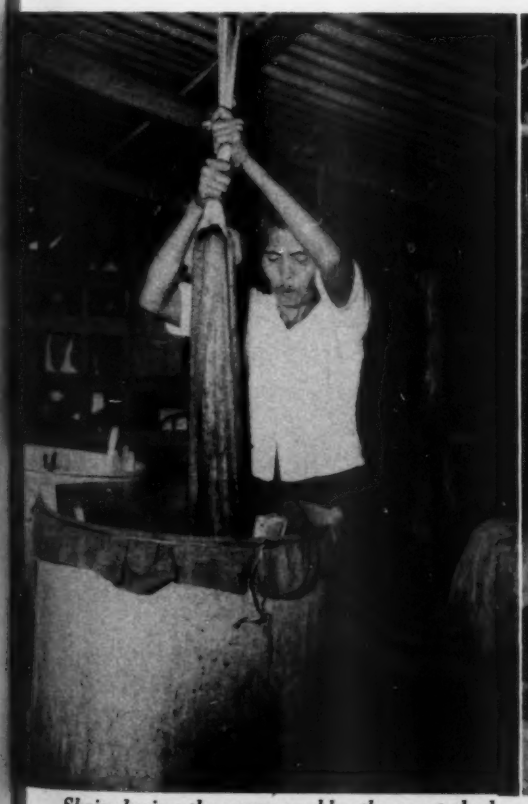
6. Improved methods of production have been found which make for standardization of the finished product. This opens up possibilities for a wider merchandising of the fabrics and their more popular use.

* * *

From this valid experiment, carried out in a distant part of the globe under far from favorable conditions, and in the aftermath of war, we see the same basic principles at work as in our own domestic handweaving industry. These principles have been stressed in AMERICAN FABRICS since its inception and are summarized in the words *Fashion begins with the Fabric.*

Two girl musicians whose loveliness is enhanced by their costumes of native Thai silks.

Preparing the warp beam of a native hand-loom before weaving a silk stole. Note the interesting yarn-dyed pattern of the warp.



Skein-dyeing the yarns enables the exact shade to be controlled and allows evenness of color.

Every loom product reveals personal pride in its making, whether of plain color or intricately conceived.

Western and Eastern styles meet and combine to give decorative harmony.

A corner in Peggy Westerfield's house in Camden, Maine. The blanket chest is filled with wedding gowns, circa 1830-1890. The small wooden object on the chest is a rum-keg from New Harbor, Maine.

A wedding dress of 1825.

An Antique Collector's Story

BY PEGGY WESTERFIELD

Mrs. Jason Westerfield, who has written the following account, is known today to a widening circle which includes some of the country's famous fine arts museums and a number of leading fabric houses. From her collection of fabric "pieces" manufacturers have selected numerous designs that have been reproduced for the current market. Her home in Camden, Maine, itself a small museum, houses a diverse collection of antiques, though her chief interest and pursuit are fabrics and costumes. Here she has written for American Fabrics an intimate account of the beginnings and growth of her collection.
— THE EDITORS

We have lived so long with old and interesting things that it's only when some one new comes to our home that I realize anew that all the odd and old things are a little out of the common run.

I have always been fascinated by the personality of things . . . their story, as far as one can learn it, and the infinite possibilities of what even a piece of China could relate could it become articulate. There is an irresistible fascination to me in nearly all old things and I don't except human beings.

I once saw a play in New York, *Still Waters*, and if I hadn't been convinced long before then that every living soul had a story, that play would certainly have convinced me. To a lesser degree I believe this to be true of inanimate objects. When I look at my little English tea-caddy with its glass sugar bowl and the two compartments for tea, I can visualize an English drawing room and the butler uncocking the caddy and measuring out the proper amount of tea; for even in the early 19th Century sugar and tea were both jealously guarded and one didn't use these indiscriminately as one does now. I wonder if even the butler had the key, or did it hang in a ring at My Lady's belt, as one sees in old English prints.

As a child I was always interested in what had gone on before me. I fear the present wasn't very important, and the future even less so. We had a neighbor in the Berkshire town where I lived as a child and during the noon period of our country school I used to live in her small house, devouring with an avidity my mother would have been horrified to witness the old *N. York Family Story* papers that our neighbor had put away in the attic years before and brought out for me to read. The illustrations were, I realize now, very lurid, as were the tales doubtless, but they were in the *once upon a time* manner, and how I loved them!

Early Leanings in Antiques

We had lots of old things in our house built early in the 18th Century — enormous fireplaces, with all the paraphernalia of the period, and the things which my mother treasured dearly — the crane, the kettles, the fire-dogs. They were not elegant affairs of polished brass but heavy iron ones, all dark with the accumulation of the centuries. Alas! the old house with its many antique treasures burned to the ground when I was twelve, but wonder of wonders! mother's cherished wild strawberry preserve was still intact in the old Dutch oven, warm, but the jars unbroken. It seemed a miracle.

I can't remember a time when I didn't collect something. The acquisition of old books was my first serious obsession with antiquities; and of course I sought them in every possible place, even to antique shops; and thus I became fascinated with furniture.

I fear I am a most plebeian person, for elegance never had too great an appeal for me. The study windows and ladder back chairs, wagon seats, tables of pine, maple and cherry — I still like to rest my hand on their surfaces and wonder what other hands a century ago polished their smooth woods to such a

Mrs. Westerfield, seated on an early comb-back Windsor rocker in a corner of her sitting room.

satin finish and wrote letters, as I am doing now, at this 18th Century cherry desk.

Out in my small pantry-study is a brass-studded, rounded top trunk, once said to be the property of General Waldo who died in 1759 and who brought this old trunk with him from Germany. We wouldn't think much of traveling in this century with such a small, rough container in which to hold our earthly belongings; but one was content with little in those rugged days, and the care with which the old trunk has been preserved shows that it was once a prized possession. It is now filled with old newspapers, the earliest from Northampton, Mass., dated 1795.

About Our House

The house in which we live, lovingly designated *Old High* by us, is filled with odd and sometimes rather startling possessions gathered together over the years by myself with, I fear, a lack of discrimination not marking the stamp of the true collector; but I like so many old things!

In a small iron chest, with an eagle on the cover, is a varied collection of old Sheffield razors, and next to them a *tooth-puller*(!) which was turned up by the plough on my brother's farm in the Berkshires. It is inscribed *1784, Dr. Smith*, and looks a veritable instrument of torture. Upstairs in a dainty little brass-bound box is another old and amusing article, connected with the toilette of an earlier day. This is a tiny fine-tooth comb of gold-plated brass, delicately engraved with the

(*please turn*)

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Bottle or glass window.

Collector's Story ... *concluded*

figure of a young girl and *Forget-me-not* below the head of a young man, and dated N. Y. 1845 — evidently a gift to a sweetheart. This tiny affair came from a farm in Appleton, Maine, and is a recent acquisition. The farmer's wife, while milking her cows, was attracted by the glitter of the brass. Apparently the cow had kicked up the earth in the barnyard where the milking was being done and brought to light this comb which had been lost perhaps a century ago ... Trifles, yes, but I, being not completely adult, am simply charmed with trifles of so fascinating a nature and history.

Old High is not old as New England houses go, built around 1839-40 by a Mr. James Seward of Camden and a short time later becoming the home of U. S. Senator J. K. Smart, a close personal friend of Jefferson Davis whom he entertained for a short period in 1858 at *Old High.*

In the 1870's the house was purchased by William Alden, a descendant of Mayflower John, and not only was the broad pillared porch added, but the first bathroom in the town of Camden installed. Alas! that the inroad of progress spoiled the lovely halls that had hitherto gone from front to rear. The former open halls now boast a powder room, so-called, and a modern bath, giving us all the *conveniences* but certainly detracting from the original charm of the house.

"Country-women's Clothes"

It's the simple cottons of our rural ancestry that make the appeal to my affections. While traveling with my husband some fifteen or twenty years ago I became fascinated with a garment on a form in the home of Lincoln, now a museum, in Springfield, Illinois. It wasn't a pretty garment, nor possessed of that elegance one sees in the beautiful dresses preserved by our great museums, but it had a charm all its own. I decided then that I would collect what, for a better term, I designate *country-women's clothes.* I made some inquiries and called a shop some few miles outside of Springfield. Late that evening they called me at our hotel and said they had turned up a few things which might interest me, and a short time later arrived with a sunbonnet, a pink challis dress circa 1850, a flowered skirt and a plaid merino dress.

Thus began the nucleus of my country-women's collection of frocks which now consists of over 150 samples of infants', children's and women's attire, with one or two waistcoats of country origin and design. Of course I do have some very sophisticated and elegant examples of clothing — brocades, satins, taffetas, etc. — but those nearest to my heart are the simple and sometimes pathetic garments of our pioneer ancestors. Since I started collecting costumes, I have been as interested in accessories as in the old dresses themselves, especially those homely additions to the country woman's garb.

And Finally . . . Fabrics

As the collection grew and the disposition of so many garments became something of a problem, I turned my attention to the fabrics themselves — calicos, ginghams and the lovely old chintz drapery examples so rich in color and design. I found them in attics, in shops, in unfinished quilt-tops, in swatches; and, as I progressed in both knowledge and the love of old textiles, their acquisition became almost an obsession with me — a pleasant one, rich in interest, for nothing is more absorbing than the study of textiles. I started building up a textile library, including books on costume, and my costume-plate collection is quite rare and varied.

I suppose I have some forty or more quilts — patchwork, copperplate, appliqué, etc. One of them, 1791, though not a pretty quilt, fascinates me on account of its history. It came from Groton, Massachusetts, where in that year Miss Mary Cooke rode on horseback to Boston to purchase the material for her wedding gown, at $1.00 the yard. She crossed the Charles River by ferry and then, having acquired her dry goods, returned to Groton where on the appointed day she was married to John Paige. The quilt contains strips of the wedding dress material, a heavy cotton with a floral design on a white background. A heart in the design symbolizes a bride's bed covering. I can just imagine Mary on that lonely trip to Boston, dreaming as she rode of her future life with John. I do hope it was a happy one; I know it was a fruitful one for the quilt was purchased from her granddaughter, now in her eighties. ***END***

LEFT TO RIGHT: *Baby dress of 1866, trimmed with hand-made faggoting. An 1840 costume comprising a hand-loomed shawl and a green and brown jacquard-loomed skirt. Light tan and blue delaine dress, 1860-1870. Trousseau frock, 1827, of white cotton with woven colored pattern and border.*

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THE WORLD'S GREATEST FLIRT

Fisba's Imported Swiss Organdy

Its tempting appeal is irresistable — Its effect — crisply charming!
Its quality is the reflection of 135 years
experienced workmanship.

Fisba's fame embraces its renowned
embroideries — men's shirtings
— fancy voiles and Everglaze* batiste.

FISBA FABRICS INC., 70 WORTH STREET, NEW YORK 13, N. Y.

ADELE SIMPSON designs in Disciplined the fashion as prophetic as the fabric itself:
a revolutionary new cotton that releases creases, keeps its inimitable, impeccable look for life.
Pale pink, blue, or beige. Sizes 10 to 16. About 70.00.

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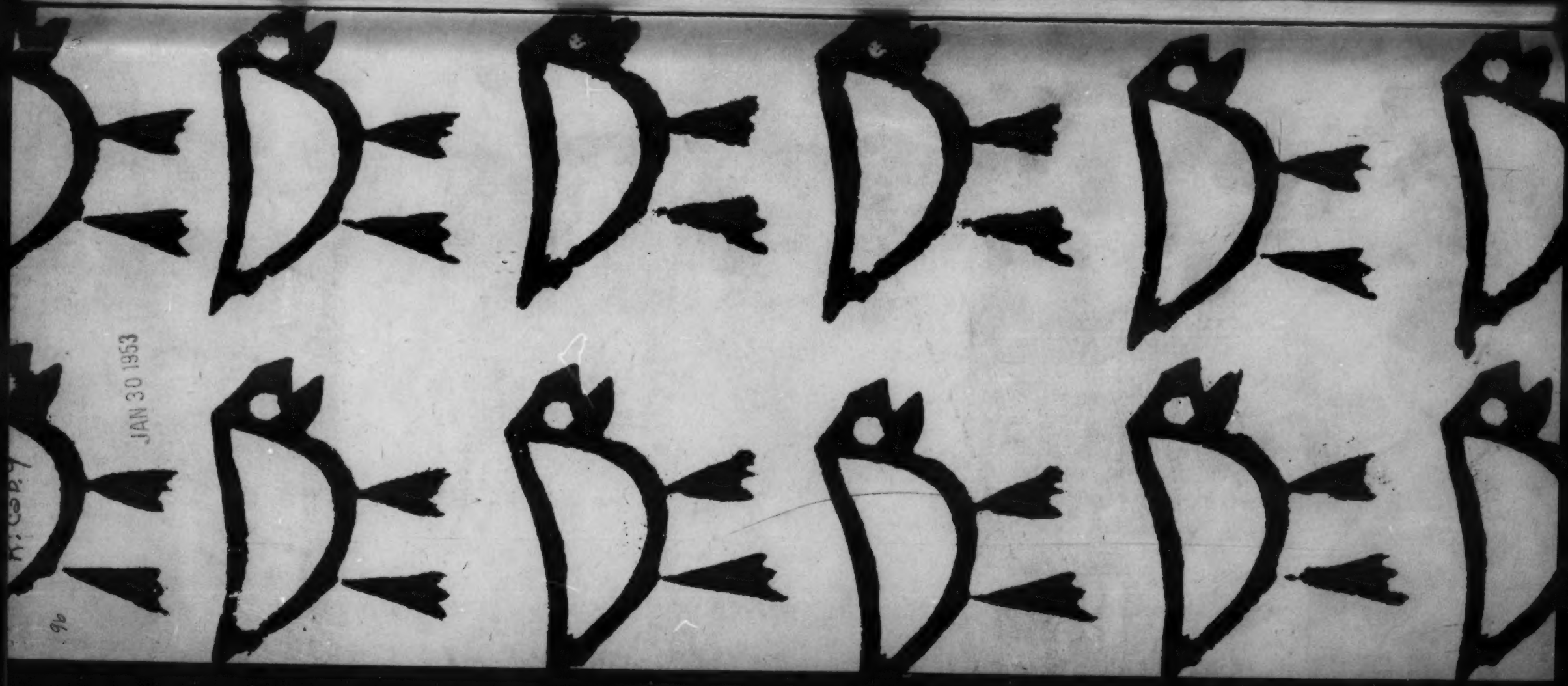

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MUSEUM